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20 March 1980

USSR Report

TRANSPORTATION

No. 1

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AIR

BUGAYEV DISCUSSES FULFILLMENT OF 1979 PLAN, GOALS FOR 1980

Moscow VOZDUSHNYY TRANSPORT in Russian 3 Jan 80 pp 1-2

[Article by B. P. Bugayev, minister of Civil Aviation: "An Important Stage in Our Sector's Development"]

[Excerpts] Civil aviation is developing dynamically, at a high tempo. Year by year, its peaceful wings are growing stronger and its contribution to the country's economy is increasing. Just during the four years of the 10th Five-Year Plan, it has carried over 390 million passengers and 11 million tons of priority national economic cargo and mail and it has worked over 350 million hectares of agricultural land from the air. The length of the routes along which Aeroflot's aircraft fly is now approaching a million kilometers. They link over 3,600 cities and other populated areas. The Soviet Union has essentially been transformed into a country of dense air traffic. International air routes are also developing continually. Just during the last ten years, passenger turnover on our international air routes has increased by more than a factor of 4. Aircraft with the Aeroflot emblem are now known in 84 of the world's states.

The successes of civil aviation are due to the continual attention and assistance from the CPSU Central Committee, its Politburo, the Soviet government and Comrade L. I. Brezhnev, personally, general secretary of the CPSU Central Committee and chairman of the USSR Supreme Soviet Presidium. This is the result of a great deal of selfless work by pilots and navigators, blue collar workers and technicians, engineers and dispatchers and all airmen. It is the result of the painstaking, persistent ideological and political indoctrination conducted by our management personnel and by party and public organizations.

The finish line of the 10th Five-Year Plan is ahead. In 1980, civil aviation will fly 159 billion passenger kilometers and carry 103 million passengers and approximately 3 million tons of cargo and mail. In agriculture and forestry, plans call for working 91 million hectares. As in previous years, the job of guaranteeing reliable air links to the remote, hard to reach areas of the Far North, Siberia and the Far East will continue. There will be an increase in the number of airports capable of receiving the modern IL-62 and TU-154 airliners. On airlines with a large passenger flow and with high intensity air traffic, regularly scheduled flights of the IL-86 airbus will begin; the IL-86 is successfully undergoing operational testing at present. There will be additional development in physical plant and equipment for airports, maintenance installations and educational institutions. A broad social program will be implemented; this program will make it possible to increase the material and cultural level for a large category of airline employees, improve their living conditions and also improve their work conditions and recreation.

The year 1980 is an important stage in the development of our economy. It will cap the Soviet People's intense work during the 10th Five-Year Plan and, to a great extent, the overall result will be determined by how well this year's targets are fulfilled. At the same time, 1980 will serve as a sort of bridge to the new milestones which should be met.

As Comrade L. I. Brezhnev pointed out at the November 1979 CPSU Central Committee Plenum, this is not just the final year of the current five-year plan, but also the foundation upon which the next five-year plan will be built. This will be a year of active preparations for the 26th Party Congress. These are the positions from which it is necessary to approach an evaluation of the work and goals accomplished during 1980.

The new year, 1980, is also important because it is linked to the beginning of the widespread, practical implementation of major party documents--the CPSU Central Committee decree on "Additional Improvement in the Economic Mechanism and on the Goals of Party and National Agencies" and the CPSU Central Committee and USSR Council of Ministers decree on "Improving Planning and Increasing the Effect of the Economic Mechanism on Increasing Production Efficiency and Work Quality." These documents have incorporated the valuable experience of socialist planning, the results of economic experiments which have been conducted and scientific recommendations. They are a major step in the package of measures to further improve planning and management and the entire management system and they are completely responsive to the contemporary stage in the country's economic development.

"The stage of mature socialism," Comrade L. I. Brezhnev emphasized, "and the scientific and technological revolution are making greater and greater demands on the machinery for managing the economy; they anticipate a further improvement in the machinery and require a great deal of goal-directed managerial work."

This is why the economic mechanism is now being targeted more and more toward increasing production efficiency and work quality, toward achieving high end results and toward meeting all the increasing needs of the public and individuals better. Managerial and planning activities are centered on rational utilization of everything at the disposal of the national economy; a goal is being advanced to primarily rely on intensive growth factors, persistently introduce scientific and technological achievements in production and make widespread use of advanced techniques.

The heart of socialist production management and the heart of the entire economic mechanism is planning. It is through the plans that the party's economic policy is realized and that the major production and social goals are accomplished. The documents which have been adopted outline a number of measures to improve the level of planning work at all echelons of the economic system. Specifically, the implicit link between the plan and scientific and technological achievements and advanced experience is increasing and there are provisions for concentrating manpower and resources to fulfill national goals. The system of planning indices is being improved. There will be a further evolution in a uniform system of long-term, five-year and annual plans. Moreover, the role of the five-year plan is especially increasing; it is actually the working program and the basis of economic activity for each enterprise, association and ministry. It is of fundamental importance that fulfillment of the five-year plan at all levels of the economic system's management will be evaluated by a cumulative total from the beginning of the five-year plan while the evaluation of the annual plan's fulfillment will be by the cumulative total from the beginning of the year. High demands are being made on the quality of plans, their degree of balance and their scientific validity.

Because of this, there will be an increase in the importance of systems programming methods in planning. In developing plans, there will be an increase in the role of work groups. The counter plans that they adopt are implicitly included in the national planning system; this is an important form of the masses participation in production management.

Provisions are also being made for a broad system of measures to accelerate technological progress and to improve product quality. The plans of ministries, departments, associations and enterprises have expanded the range of mandatory indices on technological improvements in production and on the economic impact obtained from the implementation of scientific and technological measures. Other basic measures have also been established which will guarantee and increase in the state-of-the-art for production, an improvement in product quality and an expansion of product selection. Steps have been outlined to improve the activities of scientific institutions and to improve the planning and economic incentive system for their work. An important place is being allocated to improving construction work: improving the effectiveness of capital investment and accelerating the process of bringing production capacity and facilities on-line. The basic elements of these measures can be briefly boiled down to the following: a transition to stable five-year construction plans (with the targets assigned by years); ensuring a balance between the amount of capital investment and materiel, labor and financial resources and construction organization capacity; no changes in inventory entitlements throughout the entire construction period; introducing a system of continuity in financing construction sites within the limits set by the estimate; a concurrent increase in the effect of credit on construction; and the introduction of a new index--the capital investment limit. This approach to construction work will make it possible to realize one of L. I. Brezhnev's major instructions to the effect that capital investments must not be allocated in a general manner nor for new facilities but for a planned increase in output.

The introduction of new methods of management is inseparably linked to skillful utilization of economic levers and incentives. A detailed system of measures aimed at achieving the best end results has been planned. Cost accounting, wages, the wholesale price mechanism and much more have been subordinated to this. A significant role is being allocated to increasing work groups' interest in speeding up the growth of labor productivity and reducing personnel turnover. Incentives are being increased for workers who have displayed initiative in introducing technically validated norms and in revising them in a timely manner.

The measures outlined in these decrees are primarily being disseminated in industry and construction. But, this does not at all mean that the accomplishment of this major economic and political goal does not directly affect employees in the transportation and services sectors. Moreover, the transportation ministeries, including the Ministry of Civil Aviation, have been charged to develop proposals for increasing the effect of the economic mechanism on the end results of the activities of their enterprises and organizations and to ensure a fundamental improvement in organizing transportation for national economic cargo and passengers.

It should be immediately emphasized that this is not an easy job. It demands a great deal of persistent effort and an active, creative search from our planning and financial agencies, work organization and production management specialists and the managers of administrations, associations and aircraft enterprises.

In August of last year, the ministry approved a special-purpose plan directed at preparing and implementing practical steps on this issue and it set up a standing commission which included leading specialists in civil aviation. The plan made provisions for solving a broad range of issues and problems in planning and finance, organizing work and wages, capital construction, scientific and technological progress, aircraft maintenance and repair, materiel supply and improving the quality of training for specialists. Our goal is to achieve the realization of this plan precisely within the established deadlines and to ensure the implementation of all the measures outlined in it.

We have a very important and complex problem of developing new planning and evaluation indices for the economic activities of operational enterprises. It is well known that the indices which we use do not completely reflect all aspects of our groups' production and economic activities and they are not always targeted at achieving the best end result. Eliminating these deficiencies, making the indices an effective lever for influencing production and increasing enterprises' interest in improving their work performance--this is the path along which we must persistently and firmly proceed.

With the further development of civil aviation and its increasing role and importance in the country's economy, the problem of streamlining its organizational structure and its fit with the missions being accomplished is becoming more and more acute. The problem is one of relentlessly searching for new, more progressive forms of organization while retaining everything that is of value and actually proven. It is necessary to more boldly and decisively eliminate excessive, multiple layers in production management; it is necessary not to be afraid of violating traditions which have developed over the years; and it is necessary to steadfastly improve the style and methods of all our work.

We will have a big job in setting scientifically validated flight productivity standards and flight time standards by aircraft and helicopter types, improving the statistics on labor productivity and setting targets for its growth. Moreover, it is necessary to consider all the fine details of these problems--from the type of aircraft to the special features of airports and air routes--very scrupulously and objectively.

A lot must be done to efficiently implement scientific and technological discoveries and studies and to subordinate them to production requirements. Due to the gross amount of capital investments during recent years, there is a requirement to streamline the management of capital construction. It is necessary to increase the amount of work being accomplished by the Aviation Construction Association and to make it one of the ministry's major contracting organizations. There is also a requirement for a fundamental improvement in materiel supplies for our construction. Steady attention must be paid to developing production association's (aviation enterprise) records, methods instructions, regulations and other normative documents; without these documents, it is difficult to even talk about a further improvement in the economic mechanism.

In short, there is a lot of work. Without setting myself a goal of discussing everything, I would like to especially emphasize that the preparation and implementation of the steps outlined to improve the economic mechanism must provide a concrete return from the very first steps and it must promote an increase in job performance at all levels of the economy. It is necessary to devote increased attention to the solution of key problems--efficient utilization of aircraft equipment, ensuring flight safety and regularity, improving the standards of service for passengers and shippers and strengthening discipline and procedures. It is very important that the work done at the ministry and in localities should promote even more successful fulfillment of the national plan and socialist pledges and, in the final analysis, it should meet the requirements of the country's national economy and people for air transportation more completely and in a more timely manner.

The duty of managers of aviation groups, party, labor union and Komsomol organizations is to get the substance and meaning of the realignment to each airman and get the word to everybody on the innovative spirit and profoundly scientific nature of the decisions made by the party and Soviet government. Civil aviation political workers and ideological personnel have a lot to do in this.

In October of last year, a representative meeting of political workers was held in Baku; G. A. Aliyev, candidate member of the CPSU Central Committee Politburo and first secretary of the Azerbaijan CP Central Committee, took part in it and gave a warm, penetrating speech. The participants of the meeting discussed a very important issue--measures to carry out the CPSU Central Committee decree on "Further Improvement in Ideological and Political Indoctrination"; they exchanged practical experiences and outlined ways for improving their activities. It is necessary to implement the recommendations of this meeting and to use them aggressively in ideological indoctrination and explanatory work.

Moreover, it is necessary to bear in mind that the explanation of the measures being accomplished must be conducted with an inseparable link to the search for additional slack in production and for new ways of improving the statistics on efficiency and quality. It must be closely linked to the adoption of increased socialist pledges and counterplans and to the development of all-round socialist competition. After all, it is socialist competition that provides the most complete and vivid manifestation of the Soviet man's powerful, creative force, and his inexhaustible, creative resources.

More and more aviation employees are reporting the fulfillment of pledges made in honor of the 110th anniversary of V. I. Lenin's birth. The initiatives "Work Without any Stragglers," "The Workers' Guarantee for a Five-Year Plan of Quality," and others have become very widespread among aviation groups. The patriotic movement to transform Aeroflot into the standard for transportation is becoming increasingly greater in scope. The award of the 1979 USSR State Prizes to M. M. Gurzhiyu, an aircraft captain of the Odessa Aviation Enterprise, G. S. Mal'tsev, a helicopter pilot of the Ukhtinskiy Enterprise, G. I. Tskhovrebov, an aircraft captain of the Samarakand Enterprise, and to T. G. Anodina, chief of the Ministry of Civil Aviation's Avionics Equipment Administration, testifies to the devoted work of aviation employees and to their inexhaustible initiative and innovation.

Born in the thick of the airmen, competition has a powerful charge of ideology and an enormous, mobilizing foundation. Our common goal is to support the five-year plan's outstanding workers in every way possible and to raise all the sector's employees to their level. It is necessary to help the competitors concentrate their creative search around the problems of efficiency and quality and coordinate it with the achievement of the best end results.

This is also especially important because the current slack in civil aviation and the opportunities for more efficient, high-quality work are still far from being completely used. Unfortunately, individual aviation groups are not coping with their plan targets; they are permitting irregularities in passenger and cargo transportation and they are not fulfilling their targets on capital construction and commissioning residential apartments. There are still cases of poor management and waste and there are still infractions of the documents regulating flight management and air traffic control. Certain aviation enterprises are still permitting excessive consumption of aviation fuel and energy resources. Meanwhile, planned fulfillment and the sector's smooth work are directly dependent upon the conservation of aviation fuel. Cases of a rude, indifferent attitude toward passengers have not been eliminated; this gives rise to justified complaints and criticism in the central and local press.

All of these deficiencies testify to the unfinished work of aviation group managers, political workers and public organizations. They also testify to their under estimation of the airmen's creative initiative, their inability to create an atmosphere of intense work in their groups and the poor utilization of the means of exerting ideological influence on the masses.

It can be confidently stated that there will not be good production results where they look at a man as a mechanical doer and not as an active individual and where lively, concrete work with people is replaced with general statements and high-sounding proclamations.

"Conversation with the Soviet people," said Comrade L. I. Brezhnev at the November 1979 CPSU Central Committee Plenum, "must be frank, serious, well-reasoned.... Then, the party word can be melded into the enthusiastic work and efforts of tens of millions of communists and non-party members."

The success of all our activities decisively depends upon strengthening discipline and procedures and on the strict, unfailing accomplishment of the approved plan targets. There was a time when the particular manager, while trying to save the situation, would get a downward revision in the national plan and even turn out to be among the leaders in this manner. In the contemporary environment, there is only one acceptable stand--relying on good production organization and on putting all the levers and incentives into action. The plan is the law; it must be fulfilled without any adjustments. It is necessary to understand once and for all that the steps currently being taken to further improve the machinery of management and to increase its effect on improving production efficiency and work quality are not just another campaign but a vital requirement of the times. The manager who has not understood this is doomed to unavoidable failures.

The chiefs of administrations and production associations and the captains of aviation enterprises must maintain continual, personal supervision over the fulfillment of planned targets. The managers who have conducted a detailed analysis of the results of last year's plan, who have determined the causes of disruptions and who have taken effective steps to eliminate deficiencies in the final year of the five-year plan have acted properly. Special attention should be paid to the efficient utilization of aircraft and helicopters and primarily to reducing lost time and empty return trips for transports. The issues of increasing labor productivity and of complying with financial discipline, capital construction, flying safety and air traffic schedules should not be let out of sight for a single day. The strictest possible personal supervision is also required for the efficient utilization of aircraft fuel, electricity and fuel oil. It is necessary to ensure unconditional fulfillment of the requests and contracts for air service to geological enterprises and enterprises of the petroleum, natural gas, petroleum processing and petrochemical industries, especially in Siberia, the Far North and the Far East.

The party is firmly focusing its attention on the problems of a comprehensive increase in agricultural production. After the March 1965 CPSU Central Committee Plenum, which laid the foundation for the party's current agrarian policy, the production capital of kolkhozes and sovkhozes increased by more than a factor of 3 while energy capacities increased by a factor of almost 2.5. A number of new sectors were established--such as, water management and land reclamation, machine building for animal husbandry and fodder production and the microbiology industry. A grandiose program is being implemented to transform the non-black earth region of the RSFSR. In spite of last year's difficult weather conditions, agricultural workers were able to soften the effects of nature's elements. An outstanding victory was achieved by the grain growers of Kazakhstan; the workers of Orenburgskaya Oblast contributed a major harvest for the motherland's bins; Uzbekistan, Moldaviya, Omskaya, Chelyabinskaya, Amurskaya, Khmel'nitskaya, Ternopol'skaya and other republics and oblasts successfully handled their grain procurement plans. Along with the city workers, Soviet servicemen and students, employees of civil aviation provided a great deal of assistance to the countryside. It is necessary to continue to strengthen the alliance between airmen and farmers, to steadfastly struggle to implement the party's agrarian policy and to achieve a successful implementation of the decisions of the July 1978 CPSU Central Committee Plenum.

A solution to the fundamental problems of developing our sector in the final year of the five-year plan and for the long term is inseparably linked to additional improvement in the work on international air routes, to an expansion and strengthening of friendly ties with the airlines of the fraternal socialist states and to cooperation in the field of civil aviation with the capitalist and developing countries. International airmen must react tactfully to the changes taking place in the world; they must display political vigilance, an acute class instinct, ideological unity and conviction. It is necessary to bear in mind that our ideological adversaries and their special services are continually slandering the USSR and the other socialist countries and they are not even squeamish about direct provocations. This is why Aeorflot crews on foreign routes must always be perpared for a well-reasoned, timely rejection of all our enemies' underhanded practices and insinuations and for unmasking the lies of hostile propaganda. At the same time, it is necessary to continually strengthen proletarian, socialist internationalism, carry the truth about he USSR and real socialism to the people of the planet and promote the cause of peace and detente.

An important and, frankly speaking, difficult mission will be assigned to the employees of our international air routes due to the 22nd Olympic Games which will be conducted in Moscow. Aeroflot has been approved as the official carrier for the 1980 Olympics and tens of thousands of participants and guests of the Olympic Games will be delivered to the USSR on its wings. There will be a lot of additional duties for the employees of the 1980 Olympics primary airport--Sheremet'yevo Airport--and the other airports in the capital. There will also be Olympic traffic for workers in Leningrad, Tallin, Minsk and Kiev. The reception of a large number of foreign passengers will require increased efficiency and teamwork for all airport services, a high degree of organization and discipline and the ability to rapidly and correctly get your bearings in a difficult environment. This is why it is necessary to make active preparations for the Olympic traffic now, during the first days of the new year, so we can honorably accomplish the missions assigned to Aeroflot.

We have entered the final year of the 10th Five-Year Plan. It will be a year of new accomplishments in the Soviet people's work and it will be an important stage in our progress. Like every Soviet individual, the employees of civil aviation have something to be proud of. Day by day, our strength is increasing; new successes are appearing at work; and the names of new heros are appearing. New milestones have been reached in all spheres of industrial and social affairs; there is constant growth in the material and cultural level of aviation employees. We are confidently looking ahead to tomorrow. Under the banner of October and under the leadership of Lenin's glorious party, we are consistently advancing toward new victories. This victorious advance is a favorable pledge for new successes in building communism, a pledge for a worthy greeting to the 110th anniversary of V. I. Lenin's birth and the forthcoming 26th CPSU Congress.

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AIR

SVECHNIKOV DISCUSSES AEROFLOT'S ACCOMPLISHMENTS, GOALS

Moscow STROITEL'NAYA GAZETA in Russian 10 Feb 80 p 4

[Interview with L.S. Svechnikov, deputy minister of civil aviation, by a STROITEL'NAYA GAZETA correspondent, on 10 Feb 1980, place not given]

[Excerpts] L.S. Svechnikov, deputy minister of civil aviation, today answers the questions of a STROITEL'NAYA GAZETA correspondent.

[Question] Leonid Stepanovich, every day brings us closer to the end of the Tenth Five-Year Plan. Briefly describe, please, the last four years in the life of Aeroflot, what goals remain to be achieved before the end of the current year, 1980?

[Answer] Let us compare two indicators. During the previous five-year plan Aeroflot carried 11 million tons of cargo with high priority in the national economy. This time, however, this figure was achieved in four years. And the amount of passenger traffic is growing at a very rapid rate. Half a billion people have used airplanes in the Tenth Five-Year Plan. This figure is considerably higher than the number of passengers who were carried in the period from 1923 though 1969. The builders of the Sayan-Shushenskaya GES and of the Baykal Amur Mainline, as well as builders in the Tyumen' region and builders on other major construction projects of the five-year plan, are making active use of aviation assistance. Our country is number one in the world in the use of aviation in agriculture.

This growth became possible naturally as a result of the following factors: the new, more productive equipment supplied to Aeroflot, the continuous development of our material and supply base and improved work quality. In the last year of the Tenth Five-Year Plan modern jet liners will replace outdated types of aircraft on more than 100 domestic routes. Another feature of the current year is the development of long-haul flights. After all, the overwhelming majority of passengers (more than 80 percent) use air transportation over these routes. About 50 of these lines will be opened in 1980, and they will be served by our best aircraft, the Il-62, the Tu-154 and the Tu-134.

/Question/ And when can we expect the Il-86 to come on line?

/Answer/ This 350-seat wide-bodied airbus will begin service on those lines which have the heaviest traffic and a particularly large number of passengers. At present the crews are finishing the stage of field tests and are preparing for the start of scheduled flights. Plans call for the first flight to be made on the Moscow-Sochi route.

/Question/ Aeroflot received the right to be the official carrier of the 1980 Olympics. What are the workers in aviation doing to justify this trust?

/Answer/ As the deputy minister responsible for planning and construction I am most comfortable talking about that side of the question. First--something about the new Sheremet'yevo-2 Air Terminal. The main gateway by air to Olympic Moscow looks extremely impressive against the background of the snow-covered forest of the Moscow area. The architecture is all-embracing and unique, as well as purposeful. No matter how well built and equipped the air terminal is, the passenger still hurries to get into the city. When the new complex, which is practically ready, begins to operate at full capacity, it will be able to handle more than 2,000 people per hour. One of the largest air terminals in Europe, it is equipped to a level of the best world standards.

Hundreds of thousands of guests coming for the 1980 Olumpics from various parts of the Soviet Union and from abroad will arrive in Moscow, Leningrad, Tallin, Kiev and Minsk. For this reason builders are working very hard to finish airports. A new air terminal has been built in Tallin (it will go into service in the summer) . It is very interesting architecturally. But this is not the only aspect of the Tallin airport that is unusual. This is the first time in history of airport construction that the plans were drawn up in such a way that it will be possible to change the interior in the future to increase the capacity of the airport without making significant expenditures, and the process will be much faster than it is with the usual methods of renovation. Complex work is taking place at Vnukovo: the renovations are taking place at a functioning airport. Partial renovations have also effected Domodedovo, as well as all the airports in the cities which will receive the Olympians.

/Question/ Our country's first air terminal was built in 1931 at the Moscow Central Aerodrome. How has the construction of airports developed since that time, and what are the prospects for its future development?

/Answer/ At present the Soviet Union has dozens of modern airport complexes in operation. In the last five-year plan alone 70 air terminals were built. In the Tenth Five-Year Plan they have been built in Minsk, Tashkent, Kazan', Orenburg, Anapa, in distant Pevek, and in many other cities and localities.

In addition to constructing new facilities, we are renovating already existing airports; we are building new runways, and we are putting up residential housing for aviation personnel, scientific institutions, kindergartens, etc.

The aircraft builders have actively joined the socialist competition on the occasion of the 110th anniversary of V.I. Lenin's birth. I could name tens of people who have shown themselves to be model workers. I shall limit myself to two.

For 32 consecutive years Anatoliy Ignat'yevich Kostenko, who leads a brigade of sanitary engineering personnel at the Construction and Installation Administration No 1, has lived in Leningrad. A holder of the "Decoration of Honor," and one of Aeroflot's best employees, he knows his work thoroughly and he skilfully directs his brigade, which regularly exceeds the norm many times over. In Kiev, Nikolay Sil'vestrovich Fediy heads a combined brigade at the Construction and Installation Administration No 3. This collective uses the Zlobin method in building residential housing, and each of the structures receives a "good" or "excellent" rating when it is turned over to the user. The brigade leader has been awarded the "Decoration of Honor" for his services. And there are many such people among aviation personnel. I extend sincere best wishes to them on the occasion of our holiday.

8543
CSO: 1823

AIR

ASSEMBLY OF IL-86 ENGINES REPORTED

Moscow TRUD in Russian 28 Oct 79 p 1

[Report by Ye. Ukhov: "The Jet 'Heart' of the Airbus"]

[Text] Industrial assembly of engines for new passenger aircraft--the Il-86 airbuses--has been begun in the Kazan' Order of Lenin Motor-Building Association.

The aircraft which will be equipped with them is jokingly called "the flying train": 350 persons are accommodated comfortably in its three cabins. It is proposed to include it before long in the schedule of regular Aeroflot flights, and in the 11th Five-Year Plan the airbus will be flying on dozens of domestic and international routes.

In the assembly shop, which is so clean it is like an operating room, they showed me the "heart" of the airbus--its engine. In senior craftsman I. Zharkov's section, assemblers from V. Andreyev's brigade, all in white coveralls, connected up a web of piping and fuel systems on a cylinder standing vertically from a double-level platform. Four such turbines, concealed in silver nacelles and suspended under surfaces, will enable the winged machine to fly at a cruising speed of 900 kilometers per hour.

"We have tried to develop an engine which, with the same dimensions and weight as the Il-62's engine, would exceed it in power at the same time," says A. Pavlov, the association's chief engineer. "It differs from its predecessors in a number of design innovations. Special noise suppressors which will improve its acoustic charactetistics have been adapted for use on it."

Flight safety is the principal requirement for output produced by the association. Dozens of different systems ensure the engine's reliability; in critical situations, it assumes automatic control of its operation and immediately informs the pilots about malfunctions that have arisen. In the event that one of the engines catches fire, it automatically "unfastens" from the pylon and is jettisoned...

In order to cope with series production of the new type of engine, part of the production areas had to be reconstructed and equipment had to be modernized.

"In the course of work on the engine, about 200 unique technological processes were introduced and more than 500 types of special equipment were designed and manufactured," P. Viter, Hero of Socialist Labor and general director of the association, tells us. "Here is just one of them--an industrial 'cannon' which shoots a powdered hard alloy. After such explosive spraying, the durability of a component is increased several times. Machining of components with ultrasonics, a laser, and diamonds is in wide use."

...In the plant's museum of labor glory, the engines of various types turned out here over the enterprise's nearly 50 years stand on carts: from the radial engines for the plywood U-2's to the superpowered turbojets. Soon the display will receive one more exhibit.

8936
CSO: 1823

AIR

REGULAR AIR TRAFFIC BEGINS BETWEEN LENINAKAN, MOSCOW WITH TU-134

Yerevan KOMMUNIST in Russian 17 Jan 80 p 1

[Article by A. Altunyan, special KOMMUNIST correspondent: "Leninakan-Moscow"]

> [Text] Leninakan has become the republic's second city linked by permanent air communications with Moscow.

The silvery TU-134 liner made its first landing on the reconstructed landing strip of Leninakan Airport on a cold winter evening. The arrival of the aircraft at Leninakan was nothing new. The residents of the city have long made use of Aeroflot's services. Air lines, like air bridges, now link the republic's second industrial and cultural center to many cities of the country. And even so the appearance of a representative of Tupolev's family of aircraft in the sky above Leninakan has become a real event.

Regular air traffic between Leninakan and Moscow was opened with its arrival. The residents of the city and also of Gukasyanskiy, Amasiyskiy, Akhuryanskiy, Artikskiy and Aniyskiy rayons no longer have to waste precious time and make the long trip to Yerevan to fly to the capital of our country.

The construction organizations reconstructing the airport prepared carefully for the arrival of the first TU-134. The wokers of the Repair and Construction Administration of the Armenian Republic Production Association of Civil Aviation, headed by V. Emiksezyan, labored well. The concrete landing strip which permits acceptance of large liners was constructed and turned over within compressed deadlines through their efforts. Construction of the new air terminal, whose capacity is 300 passengers per hour, is being carried out successfully. Workers of Construction Administration No 49 of Lenstroy Trust under the supervision of G. Karapetyan are erecting the building. This is a modern building which will become operational this year and will meet all the requirements now placed on similar structures.

The workers of the Armenian Republic Production Association of Civil Aviation also prepared actively to opening of the new air lines. They honorably fulfilled their socialist pledges and did everything so that the new air bridge operate clearly, reliably and trouble-free.

Thus, the Leninakan-Moscow Airline is operating. The chief of the Armenian Republic Production Association of Civil Aviation D. A. Atbash'yan comments on this fact.

"Making flights on the new air line was related to great difficulties. The fact is that TU-134 aircraft, despite their technical capabilities, are landing and taking off for the first time in the country at this height above sea level (more than 1,500 meters). And this means that we had to rearrange the flight method with respect to the new conditions and to accumlate experience which we did not previously have in our practice."

"These are special conditions. True flight speed increases by several tens of kilometers at high altitudes. The radius of turns and the vertical speed of approach to earth increase, which changes the landing profile. The aircraft's unstick speed also increases significantly. Detailed calculations had to be made, temperature and wind conditions had to be determined and the method of piloting the aircraft and controlling its systems had to be worked out jointly with specialists. These calculations were checked carefully during training flights."

A complex of work is now under way at Leninakan Airport through the efforts of our association, upon completion of which it will become possible to replace the TU-134 this year by the more powerful TU-154.

6521
CSO: 1823

MOTOR VEHICLE

NEW RULES OF THE ROAD ADOPTED

Moscow GORODSKOYE KHOZYAYSTVO MOSKVY in Russian No 12, 1979 pp 25-27

[Article by E. A. Koshkin, candidate of technical sciences, and S. G. Bachmanov, engineer: "New Highway Traffic Rules"]

[Text] On 1 January 1980 new highway traffic rules go into effect in our country. The rules which were in effect since 1973 were used as the basis for working on them. All of the tried and tested formulations are preserved in the new document for drivers. The rules introduced are only those changes and additions which under today's conditions cannot be ignored.

The section on "Road Signs" has been completely reworked. This was the result of two new standards which went into effect on 1 January 1980: GOST [All-Union State Standard) "Road Signs. General Technical Requirements" and GOST "Technical Means of Organizing Road Traffic. Rules for Utilization." The number of signs has been increased to 210. They are divided into 7 groups among which the new signs are included. "Priority Signs" indicate the sequence for crossing intersections, for crossing individual streets and for crossing narrow portions of roads; "Information and direction signs" provide information on the nature of traffic conditions or on the location of inhabited points and other sites along the line of travel. The location of service facilities is indicated by "Service Signs." They all have a standard graphic make-up and a standard compositional principle. Color coding will be used for the first time in our country for information and direction signs.

The developers of the new rules attempted to make them simpler and more understandable, having excluded questions from them whose regulation does not have a direct relation to the process of highway traffic. For example, they excluded Chapter 13: "Responsibilities of officials and others of the Transport, Highway-Use, Municipal and Other Enterprises and Organizations"; and Chapter 14: "Questions Requiring Agreement with the State Automobile Inspection." Their subject matter does not have a direct bearing on the actions of drivers and pedestrians. At the same time, the questions dealt with in these chapters are sufficiently well presented in the new statute on State Automobile inspection, in the republic Rules for Highway Maintenance and in the statutes of the corresponding ministries and departments.

Improvement in the formulation of those points in the rules which could be interpreted ambiguously and which were not precise was made. This primarily concerns points 3.73 and a number of others.

For the first time special rules were set forth for traffic on one-way roads and on thoroughfares with a lane for general use transport along fixed routes. They are included in the section "Special Traffic Conditions."

New terms were added to the section "General Statutes." A point was introduced into the section "General Responsibilities of Pedestrians and Passengers" which regulates the actions of pedestrians when approached by transport vehicles giving special sound and light signals. The rights of pedestrians at street and road crossings were somewhat expanded.

The section "Traffic Control Signals" was supplemented. New hand signals were introduced which direct drivers to increase or lower their speed and the meaning of the signal given by a whistle was further defined.

A greater number of situations was specified in which it is necessary to utilize emergency signalling. Now a driver must signal both when mechanical problems in the vehicle arise which threaten traffic safety and when the lights of opposing vehicles are blinding.

In the section "Traffic Speed and Distance" the formulation of Point 73 has been changed concerning the selection of traffic speed. It has become simpler and more specific and more fully meets contemporary conditions.

The new Rules significantly expand the section "Vehicle Spacing on the Roadway." A number of new statutes are included in the section, including those limiting unjustified lane changes in heavy traffic and permitting wider utilization of trolley lanes for traffic and others. The right of way of a trolley over non-rail types of vehicles has been set forth for those vehicles crossing trolley lanes and the roadway outside of intersections.

With the goals of increasing highway traffic capacity and traffic safety during passing, several points have been included in the Rules which impose additional responsibilities on the drivers of passing vehicles.

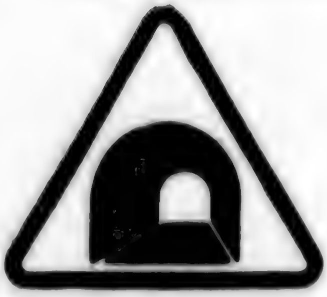
Taking into account the rapidly growing demand for parking spaces, particularly in the central areas of large cities where the conditions for maneuvering are more difficult, it is permitted in populated areas to park cars on the left side of one-way roads with a sidewalk and on roads with one lane of traffic in each direction which do not have trolley tracks located in the middle of the roadway.

In order to prevent emergency situations arising when one driver turns left and another simultaneously passes on the left, the first driver is now required to yield the road to the vehicle legally passing on the left in the same direction.

tunnel

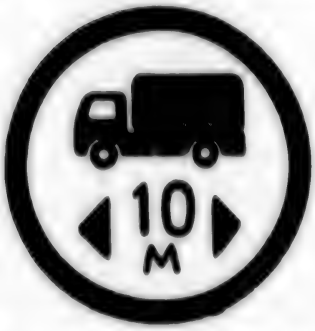
limit on vehicle length

limit on distance between vehicles

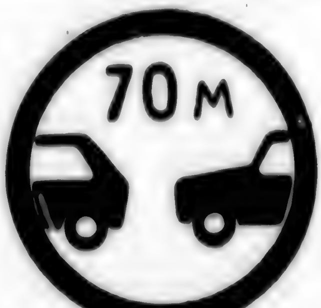


Тоннель.

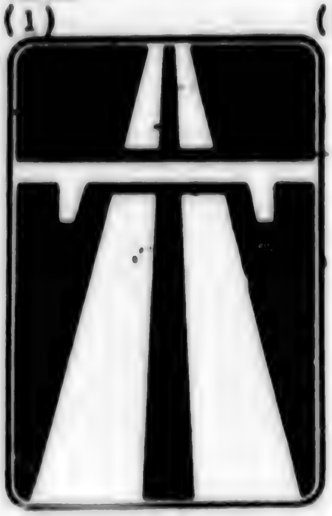
(1)



(2) *Ограничение длины транспортного средства.*



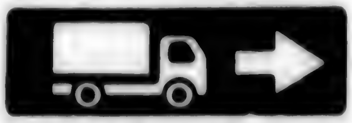
(3) *Ограничение минимальной дистанции между автомобилями*



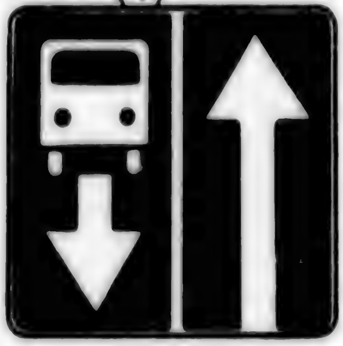
Автомагистраль. (5)

← Main highway

→ Direction of truck traffic



Направление движения для грузовых автомобилей (4)



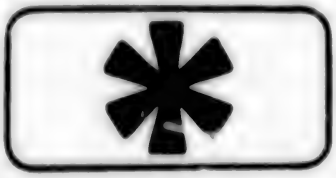
Supplementary information signs:

Sign limiting traffic on Saturdays, Sundays and holidays

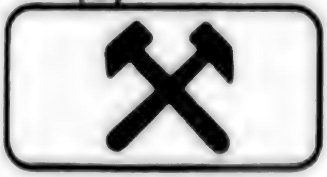
Sign limiting traffic on workdays

Parking area for vehicles without running motor

ЗНАКИ ДОПОЛНИТЕЛЬНОЙ ИНФОРМАЦИИ (6)

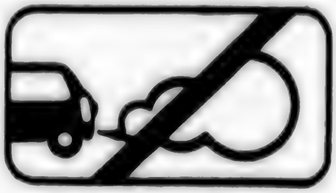


(7) *Табличка, ограничивающая действие знака в субботние, воскресные и праздничные дни*



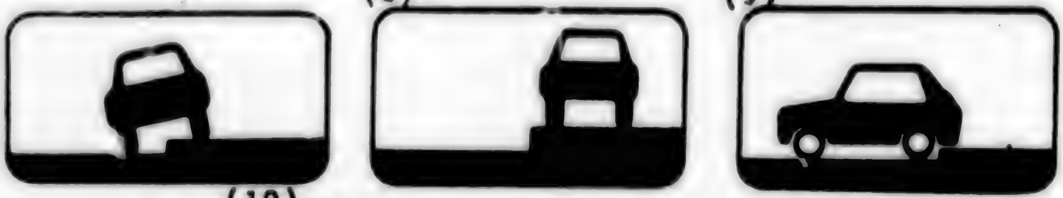
Табличка, ограничивающая действие знака в рабочие дни.

(8)



Стоянка транспортного средства с неработающим двигателем.

(9)



(10) *Способ постановки транспортного средства на стоянку.*

Methods of parking motor vehicles

The wording of the point specifying the driver's action is passing an unregulated pedestrian crossing has been changed in accordance with actual road conditions.

New points have been included in the Highway Traffic Rules which regulate the installation and use of rear fog lights, two-way turn signals and brake lights. The range of use of fog lights has been extended. They can be utilized during conditions of insufficient visibility both independently and with low and high beams.

With the goal of regulating the process of individual driver training for cars and motorcycles, the age limits for learners have been set forth in the rules as 16 and 14 respectively.

The section "Vehicle Equipment and Technical Condition" has been changed and supplemented. There are now more stringent requirements for the brake systems and the horns. Moreover, the new rules limit the use of various kinds of decorations which restrict the driver's view.

The section "Numerical, Identifying and Warning Signs, Inscriptions and Designations," in accordance with the Rules for the Registration and Accounting of Motor Vehicles, was supplemented with the point requiring owners of motor vehicles to register them within 5 days from the time of acquisition or receipt. An identification sign is being introduced which can be attached to vehicles belonging to drivers who are doctors. This was done in order to have doctors provide first aid in highway motor vehicle accidents. Special signs, in accordance with the requirements of the European Economic Commission of the United Nations, will now be used to designate vehicles transporting dangerous cargo.

The wishes of invalid drivers have been taken into account in the new Rules. In addition to present privileges, they will be allowed to drive in areas marked with the signs "Traffic Forbidden" and "Mechanized Motor Vehicle Traffic Forbidden." In accordance with the wishes of a number of ministries and departments, numerical enumeration of the subparagraphs is being introduced into the Rules.

Such, in general, are the basic features of the new Highway Traffic Rules which go into effect next year.

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11220
CSO: 1823

MOTOR VEHICLE

TRAFFIC ACCIDENT STATISTICS FOR LITHUANIA

Vilnius TIESA in Lithuanian 26 Sep 79 p 4

[Article by the Republic Automobile Inspectorate: "When Traffic Rules are Ignored"]

The Month of August	1977	1978	1979
Number of accidents	686	603	641
Deaths	84	79	81
Injuries	599	557	592

[Text] During August of this year there were almost as many deaths and injuries as there were during the same period in 1977. On the average there were 20.6 automobile accidents per day. Most of those killed were pedestrians--23, travelling by privately owned motorcycles--22, and by cars (both state-owned and private)--20. Comparing with the same month of last year, the number of automobile accidents and those injured increased as follows: motorcycle operators at fault, from 124 in August of 1977 to 161 this year (correspondingly, deaths numbered 24 and 25, injuries 130 and 158).

There were 37 traffic accidents due to bicycle operators, with 7 persons killed and 34 injured. Traffic accidents in which drivers of privately owned automobiles and tractor operators were at fault decreased. Pedestrians were more cautious, accounting for 129 traffic accidents, seven fewer than last year. However, although there was a decrease in injuries, fatalities, unfortunately, doubled.

Most auto accidents occurred due to the operators exceeding safe speed limits: 117 accidents were reported, with 13 people killed and 109 injured. Many mishaps also were caused by drivers operating under the influence of alcohol: 98 accidents, in which 15 people died and 93 were injured. Failing to yield the right-of-way was attributed to 76 accidents, with 9 persons killed and 76 injured. Sixty accidents occurred when the drivers turned left into the oncoming lane of traffic. These accidents caused four deaths and 64 injuries.

The largest single accident occurred early in the month on the Siauliai--Palanga highway, in Kretinga rayon. V. Bertasius from Panavezys, driving a "Moskvich" and passing the automobiles ahead of him crossed over to the left side of the road and hit a "Zhiguli" head on. In this accident a passenger in the "Moskvich" was killed, the "Ziguli" driver died enroute to the hospital, also, the "Moskvich" driver and three passengers of the "Zhiguli," including two children, were injured.

In the Lazdynai rayon, at the intersection of the Liepalingis-Merkine--Druskininkai-Seirijai highways, a VAZ-2106, driven by J. Valuckas, failed to give the right-of-way to and collided with VAZ-2103, which was travelling on the main highway. The impact also caused it to collide with an oncoming ZIL truck. The toll of this accident was severe: the driver of the truck and two passengers of the VAZ-2103 died.

In the Kupiskis rayon, on the road from Kupiskis to Vabalninkas, an intoxicated Birzai rayon Chernikovski collective farm driver A. Vitkauskas turned the wheel over to a tractor operator from the same farm, A. Zekonis. Along the way they gave a lift in the cab of their truck to 13 youngsters returning home from a dance. A. Zekonis lost control of the truck and it turned over. The consequence of this irresponsible act was one person killed and two injured.

In the Vilkaviskis rayon village of Alvitas, overturning of a motorcycle caused the death of S. Sapokas from Alvitas and a fellow passenger, V. Grigaitis, a construction worker at the S. Meris kolkhoz. The cause of most motorcycle accidents is excessive speed.

The reasons for traffic accidents all differ. However, there is one common note--the drivers involved showed a lack of discipline, and they disregarded traffic regulations. Now, in the fall, when it gets light later and grows dark earlier, when rain is more frequent and there is fog, we must be especially attentive on the road and must observe the traffic rules particularly strictly.

9543
CSO: 1829

RAILROAD

SOVIET RAILROAD SYSTEM'S 1979 PERFORMANCE

Moscow GUDOK in Russian 29 Jan 80 pp 1, 2

[Article based on materials of the Administration of Statistical Accounting and Reporting, MPS [Ministry of Railways]: "Overcoming the Lag and Stepping Up the Rates and Quality of Transport--A Review of the 1979 Railroad Transport Work"]

[Text] In the past four years of the 10th Five-Year Plan the Soviet people have achieved considerable success in implementing the decisions of the 25th CPSU Congress. Our national economy has undergone dynamic development. We have achieved further enhancement of the people's material and cultural living standard. A definite contribution to the development of the country's economics is being made by the workers of railroad transport. In the four years of the 10th Five-Year Plan the transport increased by 1.8 billion tons. This is 13.7 percent more than the figure for the corresponding period of the Ninth Five-Year Plan.

During this period the railroads' freight turnover showed a 17 percent increase and passenger transport a 12.1 percent increase.

The technical base of railroad transport underwent further development. The length of the lines equipped with automatic blocking and centralized traffic control increased by nearly 13,000 kilometers, electrified lines by 3,600 kilometers, sectors with diesel traction by 6,400 kilometers, and sectors with two or more tracks by 2,700 kilometers. The number of switches with electric centralized control increased by 32,000.

In 1979 the steel lines operated under extremely arduous conditions. A total of 3.670 million tons of freight was dispatched during the year. This was 106 million tons less than the plan called for and 87.9 million tons or 2.3 percent below the 1978 level. Of the 17 types of freight in the yearly product list the plan was fulfilled only for grain and ferrous metals. We cannot accept as normal the considerable lag in shipments of fuel, ore and metallurgical raw material, timber, and chemical and mineral fertilizers.

Last year some of the railroads reduced the level of transport work in comparison with 1978. Thus, as against 1978, transport on the Sverdlovsk Railroad fell off by 18.9 million tons, the Gor'kiy Railroad by 8.9 million tons, the Kuybyshev railroad by 11.1 million tons, the South Ural Railroad by 7.8 million tons, the Donetsk Railroad by 7.1 million tons, the L'vov Railroad by 6.1 million tons, and the Kemerovo Railroad by 5.1 million tons. These seven railroads alone were responsible for late shipment of more than 65 million tons of the most important freight. And after all, they had all the resources necessary for fulfillment of the plan and they maintained a considerable surplus of rolling stock for the assigned volume of transport.

Twenty-three railroads fulfilled the plan for total number of shipments. Some of them were able to fulfill the plan for many types of freight. At the same time, many of the railroads had considerable undershipment of critical types of output.

Freight turnover amounted to 3.352 billion rate-table ton-kilometers. This was nearly 2.3 percent below the plan and it was below the 1978 level. Freight turnover declined chiefly because of a reduction in the volume of shipments. Of the 14 railroads which did not fulfill the assignments for this basic volume indicator the lowest level was on the South Ural, Tselina, Volga, Kuybyshev and Krasnoyarsk railroads.

Fulfillment of passenger turnover amounted to 335.1 million passenger kilometers, that is, 0.9 percent more than in 1978. The plan assignment was not fulfilled in full. The railroads which were successful with the passenger turnover plan were the Oktyabr', the Baltic, the Gor'kiy, the Moldavian, the Pridneprovsk, the North Caucasus, the Southeastern, the Central Asian and the Krasnoyarsk. The lowest level of fulfillment of the plan for this indicator was recorded for the Northern, L'vov, Transcaucasus, Azerbaijan, Kuybybshev, South Ural, West Siberian and Kemerovo railroads.

The proportion of routing of shipments was 46 percent, that is, was on the level of the assignment. It was 0.5 percent more than in 1978; this was primarily for pit coal, shale, grain, fluxes, building materials, and some other types of output. At the same time, the proportion declined for oil and timber freight, nonferrous ore, refractory materials, and a number of other products.

In 1979 the escalation of the static load continued. It was 120 kilograms above the planned level and 500 kilograms above the level of the previous year. Overfulfillment of this assignment with the same amount of rolling stock made possible additional shipment of 8.5 million tons of national economic output. It is especially important that the static load was increased for such large-tonnage freight as pit coal, petroleum and petroleum products, mineral fertilizers, building materials, industrial raw material, cement, fluxes, refractory materials, and other products.

The average distance of the shipments increased by one kilometer for the network as a whole and by these distances for such important types of freight as the following: pit coal--13 kilometers, grain--41, coke--38, industrial raw material--16, and metal structures--78 kilometers.

A serious deficiency in the work of the railroads is the lag in unloading and the failure to fulfill the norms for the layover of cars on the spur tracks. Last year approximately 12,000 cars daily were not unloaded as per the norm. Unloading was very unsatisfactory on the Sverdlovsk, South Ural, Far Eastern, Southern, Southwestern and Transfaykal railroads. On these and some other railroads the level of unloading was considerably below the 1978 figures.

Working with great exertion and striving to provide for shipments of fuel and energy products, ore and metallurgical freight, grain shipments for agriculture, and other freight, the collectives of a number of railroads and departments are directing vigorous efforts to seeking out and mobilizing reserves for optimum utilization of the rolling stock. As compared to 1978, 16 railroads have speeded up car turnover, reduced the time the car spends under loading operations and at the service stations, and increased the sector speed and the productivity of the car and locomotive. The Moscow, Donetsk, Moldavian and Odessa railroads fulfilled the yearly assignment for car turnover.

The difficulties in advancing the flow of cars and the resulting increase in the time spent by the transit cars at the stations had an adverse effect on the car turnover of many of the railroads. Consequently, the network as a whole and most of the roads did not fulfill the plan assignments for this indicator.

The decline in the level of both interroad and intraroad delivery and disruptions in the schedule of movement of the trains led to a reduction of the sector and route speed both for the network as a whole and for many of the roads. The speed was increased on the Oktyabr', Baltic, Pridneprovsk, Donetsk, North Caucasus, Transcaucasus, Belorussian, Moldavian and Alma-Ata lines.

Developing the CPSU Central Committee--approved initiative of the Moscow main line in operating heavy trains, all the roads, with the exception of the Southeastern and the Tselinna, increased the average weight of the freight trains. For the network the average weight was 2,803 tons, which was 9 tons more than the plan and 26 tons more than the level achieved in 1978. On the Moscow Railroad the average weight was increased by 60 tons, the Baltic by 31 tons, the Gor'kiy by 31, the Odessa by 48, the Southern by 39, the Azerbaijan by 35, the West Kazakhstan by 64, the Sverdlovsk by 50, the South Ural by 52, the West Siberian by 55 and the Krasnoyarsk by 40 tons.

Steady operational work is in many respects dependent on the technical condition of the facilities, installations and rolling stock. In comparison with 1978, the length of the sectors posting notices concerning reduction of speed increased by 5 percent. And 50 percent of these notices were posted on seven railroads—the Moscow, L'vov, Volga, Central Asian, Sverdlovsk, South Ural and Kemerovo.

On a number of roads there was an increase in the percentage of defective locomotives with substantial repair problems: diesel locomotives on the Gor'kiy, Donetsk and Central Asian lines, electric locomotives of the Azerbaijan, Sverdlovsk and Kemerovo lines, and diesel and electric locomotives on the Southeastern, South Ural and Far Eastern lines. On many of the lines there has been an increase in the time spent by the locomotives in repair and there is still a great number of instances of locomotives being put in for technical servicing beyond the prescribed mileage. There has not been any reduction in the number of instances of locomotives going in for nonplanned repairs and for malfunctioning occurring en route.

The number of cars coming loose from freight trains because of technical defects is still very large. The number of cars coming uncoupled has increased by 2,047 on the Transbaykal Railroad, by 1,598 on the Alma-Ata line, and by 1,937 on the West Kazakhstan Railroad. The number of damages suffered by railroad cars increased greatly on the Pridneprovsk, Far Eastern, East Siberian and Baltic roads.

Railroad transport is a large consumer of fuel and energy resources and economical use of these resources has great importance. Last year the train service for the network as a whole achieved a saving of 125,000 tons of diesel fuel and 161 million kilowatt-hours of electric power. At the same time, there was overexpenditure on the Kuybyshev, Krasnoyarsk, Tselinna, Kemerovo and Southwestern railroads.

In 1979 a great deal was done to strengthen the material and technical base for railroad transport and there was extensive construction of cultural, personal service, and social facilities.

The November (1979) plenum of the CPSU Central Committee focused a great deal of attention on capital construction as a major state problem, the solution of which determines the development of our economic system, the rates of scientific-technical progress in the country, and the efficiency of production.

In 1979, to increase the effectiveness of the capital investments allotted by the Ministry of Railways, capital and resources were directed primarily to the construction of underway projects designed for increasing or strengthening the traffic and carrying capacity of the railroads, re-equipping the existing enterprises, and constructing housing and other installations of a nonproduction character.

The capital investments put into operation amounted to 156 million rubles more than in 1978. Fulfillment was achieved on assignments for putting new railroad lines secondary tracks, automatic blocking and electric centralized control into operation, for electrification of sectors, and for developing and extending the station tracks. However, the plan for capital investments was only 94.4 percent fulfilled. The amount put into operation was 232 million rubles short of the planned amount.

The capital investment plan for the installations of the Baykal-Amur main line was overfulfilled by 12.5 percent. However, here too they fell short of the plan for putting capital into operation--by 10 percent for municipal construction, 20 percent for educational installations, and 29 percent for public health service.

For construction of metro lines the plan was 7.3 percent overfulfilled. More than 22 kilometers of underground lines were put into operation.

For the Ministry of Railways as a whole the plan for construction and installation work was only 86.7 percent fulfilled by the organizations of the Mintransstroy [Ministry of Transport Construction].

Only seven railroads succeeded in fulfilling their assignment. The largest arrears were on the Gor'kiy, Volga, South Ural, East Siberian, West Siberian, Kemerovo, Kuybyshev, Azerbaijan and Far Eastern railroads. On these lines fulfillment of the yearly plan ranged between 66 and 81.5 percent.

In 1979 there were put into operation 452 kilometers of new lines, 791 kilometers of secondary tracks, more than 1300 kilometers of electrified lines, and 3,182 kilometers of automatic blocking and centralized traffic control. The station tracks were extended 390 kilometers and nearly 2,400 kilometers of intercity cable lines were laid. At the same time, more than 900 switches are still not covered by the electric centralized control. A number of installations were not turned over for operation.

The plan for putting housing into operation was only 86 percent fulfilled. The railroad workers obtained 225,000 square meters less than the plan called for. This deficit includes 167,000 square meters from the construction organizations of Mintransstroy.

Nineteen railroads failed to fulfill the plan for housing. The Kemerovo line was 21 percent short, the Moldavian 36 percent, the West Siberian 49 percent, the Far Eastern 67 percent, the Sverdlovsk 71 percent, the West Kazakhstan 73 percent and the Tselinna 74 percent.

Not fully implemented was the assignment for putting preschool institutions and public health installations into operation.

Not fulfilled was the yearly plan for delivery of rolling stock and containers to the railroad transport organizations. Shortages in delivery were as follows: freight cars--5,713, main-line diesel locomotives--86 and switching ones--33, electric locomotives--31, passenger cars--173, and containers--8,431, including 1,750 twenty-two containers.

The railroad-transport industrial enterprises achieved 98.9 percent fulfillment of the planned assignment for output to be sold. The volume of output sold amounted to 1.936 million rubles, which was 1.7 percent over the 1978 level. The plan for repair of rolling stock and production of spare parts was 0.5 percent overfulfilled by the plants and 1.2 percent overfulfilled by the industrial enterprises of the railroads. Sale of output by the track service enterprises was 6.7 percent less than in 1978. The plants of the TsTVR [Main Administration for Repair of Rolling Stock and Production of Spare Parts] failed to carry out on-schedule repair of 55 diesel locomotives, 1,158 freight cars and 60 passenger cars.

For the network as a whole the plan for repair at the depots was 1,600 cars overfulfilled for freight cars and 10 cars overfulfilled for passenger cars. For plant repair of freight cars the lag was chiefly the fault of the Barnaul, Bogotol, Kizyl-Arvat, Darnitskiy, Roslavl' and Tambov plants of TsTVR and for plant repair of passenger cars the Alma-Ata, Voronezh, Ordzhonikidze and Chita plants. It should be noted also that the TsTVR plants failed to carry out the plan for production of containers, repair of diesel locomotive engines and auziliary machines, preparation of wheel pairs with a change of elements, and production of brake shoes and other output as well as modernization of the rolling stock.

The serious deficiencies in the transport work could not also fail to have an effect on the most important economic indicators. Last year the labor productivity of the workers employed in transport declined 2.7 percent as compared to 1978. The cost of the transport increased. As a result, the prescribed assignment for profit was not fulfilled. On most of the railroads the rates of increase of wages exceeded the rates of increase of labor productivity.

The collectives of the enterprises and all the railroad workers are now making a careful and critical analysis of the results in the year just ended and they are mapping out concrete measures to insure that the situation will be rectified as soon as possible.

The workers of the steel lines, like all the Soviet people, are fully resolved to make 1980--the concluding year of the 10th Five-Year Plan and the year of preparation for the 26th Party Congress--a year of shock work and to commemorate the 110th anniversary of V. I. Lenin's birth with eminent labor achievements.

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CSO: 1829

RAILROAD

RAILROAD TRANSPORT RESOURCES OF THE CONSTRUCTION MINISTRIES

Moscow STROITEL'NAYA GAZETA in Russian 3 Feb 80 p 2

[Article by V. Illarionov: "The Transport Shop of the Construction Project"]

[Text] Approximately 850 million tons or 20 percent of all goods shipped by rail annually is sent for construction.

Taking into account the special intensity on the country's railroads, which was discussed at the November (1979) Plenary Session of the CPSU Central Committee, the builders are attempting to utilize rolling stock better, to reduce rail car idle times and to increase the level of mechanization of loading-unloading operations. The experience of this work at enterprises of the Ministry of the Construction Materials Industry of the USSR merits attention.

A competition of collectives of transport shops, enterprises, locomotive brigades, electric locomotive engineers and diesel locomotive engineers has been organized here. For example, the collectives of the transport shop of the Teploozersk Cement Plant and Teploye Ozero Station of the Far Eastern Railroad concluded an agreement with each other for a competition. Clear delivery of rail cars has been organized and timely loading and preservation of them have been provided. The plant constantly assists the railroad workers in forming unit trains and allocate their own people and diesel locomotives, while the station workers help the cement workers to determine the optimum variants of using the rolling stock, to repair the diesel locomotives and to clean dirty rail cars. Rail car idle times were reduced by 1.7 hours last year at the enterprise and approximately 10,000 tons of cement above the plan were shipped.

Approximately 50 transport shops of the large enterprises of the ministry concluded similar agreements for a competition and cooperation with the railroad workers. The principles of the "Workers Relay Race" have found firm support here.

Organizations of the construction industries are also putting many reserves into operation. Rail car idle times have recently been reduced by almost one-half at the Apatitstroy Trust. The builders of Kemerovskaya, Sverdlovskaya and Chelyabinskaya oblasts have also achieved good indicators. The winners of the competition among collectives of railroad facilities and transport shops of the enterprises and organizations of Mintyazhstroy [Ministry of Heavy Construction] of the USSR are quarterly awarded two challenge red banners with monetary prizes of the ministry and the central trade-union committee. An index of fulfilling the rail car idle time norms for loading operations has also been included among the conditions of the competition of organizations of Minzhilgrazhdanstroy [Ministry of Housing and Civil Construction] of the RSFSR.

However, interaction of the railroad workers and builders has far from been organized everywhere. Not one of the contracting ministries has yet fulfilled the planned indicators in loading-unloading operations. The idle time of each rail car reaches an average of 7.72 hours with a norm of 4.72 hours at Minstroy [Ministry of Construction] of the USSR, while the idle time exceeds the norm by 1.8 hours at Minsel'stroy [Ministry of Rural Construction] of the USSR.

The matter can be corrected only through the joint efforts of the transport workers, builders and planning bodies. Efficient planning of multiple shipments of construction goods must primarily be achieved. There is now no unified plan on the types of transport: rail, motor or river. Trains with freight for the shock construction projects of Siberia, the Arctic, the Far East and Kazakhstan are frequently being delayed in port on the Volga, Ob', Irtysh, Yenise, Lena and other rivers. Much time and effort is being lost in transshipping the materials from rail cars to trucks.

There are as yet no annual plans for deliveries of rail cars for the goods of construction organizations.

MPS [Ministry of Railways] has recently been practicing forming-up of block trains with freight for construction subdivisions. This organization of shipments is undoubtedly promising. But it is sad that the activity of one ministry is not coordinated with the capabilities and needs of others. Not every construction organization, especially in rural locales, can accept and unload an entire express train with materials within a short deadline. There are neither spur tracks nor means of mechanization at small stations. More efficient solutions are obviously required.

It is known that the requirements on loading and unloading of construction materials are different. However, this is essentially not taken into account by services of MPS. The builders receive lumber and bricks, cement and machinery, gypsum and reinforced concrete columns in the same rail cars. Production of specialized transport and rail car containers must be organized on a wide scale and part of the existing fleet of rolling stock must be reconstructed.

The builders have few transport facilities. Only organizations of Minstroymaterialov [Ministry of the Construction Materials Industry] of the USSR have 1,560 locomotives, while the subdivisions of Mintyazhstroy of the USSR have 530 locomotives and more than 6,300 rail cars at their disposal. However, there is no equipment repair base. Enterprises of MPS accept a very limited number of locomotives and rail cars for repair. The builders are forced to take on this matter themselves. For example, rail car containers have begun to be produced at plants of Minstroy of the USSR and some other ministries and complex repair of rolling stock is being carried out. It is 2-3 times more expensive than at specialized enterprises. The deadlines of repair work are drawn out excessively. This repair should obviously be carried out at specialized enterprises and according to the same norms as the rolling stock of MPS.

A competition to accelerate handling of rail cars, to reduce their idle times for loading operations, to mechanize loading-unloading operations and to ensure the preservation of freight and rolling stock is now being developed among collectives of the transport enterprises and organizations and shops of the contract ministries. The builders must organize clearer interaction with the transport workers by the "Workers Relay Race" principle.

6521
CSO: 1823

RAILROADS

MINISTRY OF RAILWAYS RESPONDS TO CRITICISM OF LOCOMOTIVES

Moscow IZVESTIYA in Russian 16 Mar 79 p 1

[Article: "The Ministry of Railways of the USSR Answers the Editors"]

[Text] The Ministry of Railways reports the following with regard to the article "The Trains Should Travel Faster" (IZVESTIYA No 3, 1979):

"Diesel locomotives of the TEZ series represent a significant part of the fleet of mainline locomotives and perform extensive work in freight shipment. Taking this circumstance into account, modernization of the most crucial subassemblies of the TEZ--the diesel and electric traction motors--are being modernized. Their strength and wear resistance are being increased by using modern materials and structures."

"With regard to the fact that the diesels of a specific number of diesel locomotives of the indicated series have used up their operating life, the problem of replacing them with new ones is being considered."

"Delivery of articles manufactured on the base of fluorine-containing rubber was begun in 1978 to increase the wear resistance of rubber articles. These articles for diesel locomotives of series TEP-60 have been sent to many railroads, including the Baltic Railroad, and to the Zasulauks locomotive depot. The delivery will be increased significantly this year, specifically, for diesel locomotives of series TEZ."

"Measures have been implemented to improve the supply of spare parts from enterprises of the Ministry of Railways: checking on timely support of the plants with materials and metallurgical raw material has been intensified additional equipment is being installed at the Poltava and Zaporozh'ye plants and work is being carried out to improve the production processes at the Orenburg Plant."

6531
CSO: 1823

IMPROVEMENT IN RAILROAD TRANSPORT SOUGHT

Moscow GUDOK in Russian 11 Jul 79 p 2

[Article: "For All-Union Railroad Workers' Day--By the Tenth Five-Year Plan Route"]

[Excerpts] The Development and Renovation of the Steel Lines

Yes, our railroads have pledged themselves to shoulder an enormous load, one unprecedented in the world's experience. The 1978 freight turnover exceeded 3.429 billion ton-kilometers. This is more than half of all the freight turnover accomplished on the steel tracks of our planet. The shipments embraced nearly 3.758 million tons of national economic output. Passenger turnover exceeded 332 billion passenger-kilometers, which is about one-fourth of the passenger transport handled by the world's railroads.

Since the beginning of the 10th Five-Year we have put into operation new lines totaling 1,893 kilometers in length. The overall length of the roads serviced by the progressive railways themselves was increased by 2,018 kilometers. Built in the sectors were secondary tracks with an aggregate length of 9,226 kilometers. A total of 1,878 kilometers of lines has been equipped with automatic locking and centralized traffic control.

The state is allocating enormous funds for the development and renovation of railroad transport. In the current year alone 4.5 billion rubles have been appropriated for this purpose--far more than last year. And all the necessary steps must be taken to see to it that the capital investments are developed on time and that they provide a yield more rapidly.

In the last 3-1/2 years of the 10th Five-Year Plan the railroads have received nearly 1,600 electric locomotives, 2,640 cars for electric and diesel trains, and about 2,050 main line and nearly 1,680 shunting diesel locomotives. More than 254,000 freight cars and about 10,500 passenger cars were delivered. Nearly 174,000 units were added to the stock of containers; included in this was receipt of 7,100 containers with a freight capacity of 20 tons.

A Faster Rate of Transport

An especially poor job was done in preparing the locomotives for the winter. In a number of diesel locomotive depots there was a failure to meet the schedule in the transport of diesel fuel and lubricant. And at the Kuybyshev and several other roads they did not even get around to procuring the necessary quantity of sand. The poor quality of the repair and the violations of technological discipline and the rules for operation resulted in a situation wherein the most difficult months--January and February--a daily average of more than 540 diesel locomotives and 90 electric locomotives were not in operation because of damage and stoppages for nonplan repair. And this in the period when considerable numbers of the locomotives are recruited for snow-removal work. Incidentally, the snow removal work itself has been organized in simply wretched fashion in a number of places. Because of poor preparation, the snow-removal equipment has been constantly going out of order and has been used in a manner that is far from ideal. A great deal of trouble has been caused by breaks in the contact network and by cases of uncoupling of cars from the trains. And again this was the result of a careless attitude toward the preparation of the equipment and personnel for the winter.

Unfortunately, we are compelled to state that in transport by no means all of our areas have learned to draw the proper conclusions from past miscalculations and errors. The railroad workers know how much trouble is caused and how bad is the effect on the movement of the trains when notices are posted that limitations must be placed on speed because of the poor condition of the tracks. And other traffic commanders are constantly abolishing "windows" for repair of the lines so that the work sometimes drags on until well into the fall when you already have a situation of repair and nonrepair. Some of the track-maintenance subdivisions are making poor use of the "windows." In May of this year alone more than 150 of the "windows" were overexposed. The situation with respect to the condition of the track is very serious. You see, more than 4,000 warnings are now in effect in the network. And we need to do everything we can to get the lines in shape before the onset of the cold weather.

It is wholly intolerable that a number of transport subdivisions have allowed discipline to become lax. A particularly undesirable situation has developed in the Transbaykal, Far Eastern, West Kazakhstan and the virgin land subdivisions. Per thousands workers these areas have received from half again as many as twice as many penalties as the network average for violations of the PTE [technical operations rules] and for defects in the work. Here and there, particularly in the Transcaucasus, they are substituting daily, painstaking educational work by naked administrative measures--penalties are being handed out right and left.

We cannot and we don't have the right to put up with last year's experience with its considerable increase of unauthorized absences from work and other violations. The figures compiled by the economists show that on the average more than 19,000 railroad workers every year are not on the job because of unauthorized absences, occupational injuries and administrative leaves. This causes a 0.7 percent reduction in labor productivity.

It is a trite and copy-book truth that transport operates when the wheels turn. Consequently, all considerations must be made subordinate to the movement of the trains, to their swift passage through the sectors, and to the rapid processing of them at the technical stations. It is essential to remove all the obstacles and barriers at the junctions of the transport conveyor and to see to it that the slogan of the railroad workers of the southern line--"The gate of the junctions--wide open"--becomes the unalterable rule for all.

For the Equipment--Advanced Experience

Increasing the weight and length of the trains has always been the most effective way of putting an increased flow of freight into operation and stepping up the carrying capacity of the sectors. Under present conditions, with the enormous volume of traffic and when many important sectors have their carrying capacity pressed into service to practically the maximum extent, this method is the chief potentiality for putting increased flow of freight into operation. And doing this with minimum additional expenditures of labor, facilities, and fuel and energy resources.

The work of the Moscow railroad is an example of a comprehensive engineering approach to the undertaking, of recruitment of workers from all the basic services for accomplishment of the assigned task, and of significant restructuring of the technology in all the links of the transport conveyor. It seems that this work can best be illustrated by looking at the chief tasks confronting the leading industries of our multifaceted transport organization and by showing the most important reserves which we need to apply to the work.

The trip of the heavy train begins at the marshalling station. Before it is dispatched on the route, the train has to be marshalled. It is best to include in these trains cars with a high static load. Then with the same length it is possible to marshall a train of a larger weight. This means every effort should be made to make maximum use of the holding and carrying capacity of each car, to everywhere adopt the progressive methods of compact loading and to disseminate the experience of the best receiving and delivery organizations. We would call to mind the following fact:

An increase of only 100 kilograms in the static load makes it possible to transport yearly an additional 7.3 million tons of various national economic products.

Speeding up the processing of the cars and trains by only one minute at each technical station will make it possible on a network scale to transport an additional half million tons of freight.

Stepping up the level of route planning on the network by only one percent is equivalent to making available additional loading resources for the transport of 200,000 tons of freight.

So our heavy-weight train has been marshalled. Now it has to be carefully inspected and each car checked so that the train can proceed along its guaranteed run without delays and without the smallest hitch. Malfunctioning en route is fraught with serious consequences. This is true of any train and particularly the heavy-weight one. Unfortunately the number of instances of cars becoming detached from the trains because of technical defects is still large in the network. In May alone about 17,000 cars were detached, including nearly 2,800 as a result of axle friction; this is considerably more than the same month last year. Apparently, by no means every organization has adopted the methods of M. P. Batin, P. G. Yukhnevich and other innovators, who have learned through almost inaudible symptoms to detect latent defects in the axle box and other units of the cars and to quickly eliminate them. Apparently, not every organization, when organizing the movement of heavy and long trains, is mindful of the need to improve the work of the points for technical servicing of the cars and the points for preparation of the rolling stock for loading. Nor has every organization been persistent in its efforts to achieve enhancement of the quality of the repair of the cars. And this needs to be done everywhere and without delay.

Increasing the sector speed of movement of the trains by only one kilometer an hour makes it possible in a year to transport an additional 3.3 million tons of freight.

Joining our steel main lines, which extend for 140,000 kilometers, are many spur-tracks of the industrial enterprises, electric power stations, and construction, supply and procurement organizations; the aggregate length of these lines exceeds 94,000 kilometers. The railroads operate in close cooperation with the maritime and river ports and with the trucking organizations. Here--on the spur-lines and at the ports--there are carried out more than 80 percent of the labor-intensive loading and unloading operations and here the transport process begins and ends.

There are already 440 million rubles in the innovators' fund of the 10th Five-Year Plan. There is every possibility that the five-year commitments will be fulfilled in four years.

By Labor and Honor

In the three years of the 10th Five-Year Plan there have been built for the railroad workers and the members of their families nearly 4.326 million square meters of housing, schools for 32,000 pupils, and kindergartens and nursery schools for 29,300 children.

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NEW STATIONS OF MOSCOW METRO PUT INTO USE

Moscow GORODSKOYE KHOZYAYSTVO MOSKVY in Russian No 12, 1979 pp 23-24

[Article by P. A. Vasyukov, chief of the State Administration of Construction of the Moscow Subway; and I. V. Usenko, engineer: "The Subway Arrives in Novogireyevo"]

[Text] The construction of the 8th line of the capital subway, the Kalininskiy radius, is being completed, which is the next stage in putting the Master Plan for the Development of the Capital into effect. When it is put into operation, the population of the residential areas adjoining the Highway of Enthusiasts and the residents of the great, new construction projects, Perovo and Novogireyevo, will acquire a reliable transportation link with the center of the city. The route will become shorter and more comfortable for the workers of the numerous industrial enterprises and institutions located in the Kalininskiy and Perovskiy regions.

The new radius is the first phase of the future Kiev-Kalininskiy diameter line which in the future, passing through the center of the city and the stations "Novokuznetskaya" and "Arbatskaya," will cut across the capital from the east to the west. In the future the line will come out beyond the limits of the Moscow Belt Highway toward Reutov in the east and towards Solntsevo in the west.

The length of the Kalininskiy radius is 12.3 kilometers, of which 9.6 kilometers were built using the deep foundation method and 2.7 kilometers were constructed using the method of open-foundation pits. During construction of the line, 1,600,000 cubic meters of earth were removed and more than 250,000 cubic meters of concrete and reinforced concrete and 133,000 tons of cast iron pipe were laid.

The new underground line begins at Taganskaya Square where the first station, "Marksistskaya," is located. It became a part of the large transfer junction which connects the beltline, the Zhdanovsko-Krasnopresnenskaya line and the Kalininskiy radius. From the station the passengers can exit through an underground lobby onto Marksistskaya and Taganskaya streets.

The new line is connected with the beltline and the Zhdanovsko-Krasnopresnenskaya lines by one-way connecting tunnels.

From the "Marksistskaya" station the line continues to Il'ich Square where a station with the same name has been built with exits to the square and toward the railroad platform "Hammer and Sickle." Farther the lines passes along the Highway of Enthusiasts. At its junction with Aviamotornaya Street there is a station of the same name. Four escalators deliver passengers from here to the underground lobby which is connected with a pedestrian passage with exits onto the Highway of Enthusiasts and Aviamotornaya Street.

The next station, the "Highway of Enthusiasts," was built at the junction of this surface highway with Elektrodnaya Street. The middle room of the subway terminal is connected with the underground lobby by three escalators. The exits have been provided for through a pedestrian passage to the Highway of Enthusiasts and Elektrodnaya Street. All of the stations mentioned on the Kalininskiy radius have deep foundations: the "Marksistskaya" and "Aviamotornaya" are of the column type and "Il'ich Square" and "Highway of Enthusiasts" are of the pylon type.

Beyond the station "Highway of Enthusiasts" the underground line moves away from the highway and continues along Zelenyy Prospekt. From here to the end of the radius the construction of tunnels and subway stations is being carried out using the method of open foundation pits. The single-arched station "Perovo" is located at the intersection of Zelenyy Prospekt and 2d Vladimirskaya Street.

The last subway station on the radius, "Novogireyevo," was constructed at the intersection of Zelenyy and Svobodnyy Prospekts with exits onto both of these streets. Here the line ends. The trip from the "Novogireyevo" station to the "Marksistskaya" station takes a passenger only 13.5 minutes.

A car barn was built at the end of the Kalininskiy radius on 14 spurs with repair shops, automated washers and air-blast cleaners for the rolling stock. The administrative and services wing was also built here, the facilities of which provide the maximum conveniences for the operational services workers. For example, the drivers and their assistants are provided with sleeping facilities, showers, a cafeteria with modern kitchen equipment, a reading room and an office for technical studies.

The electric power supply for the Kalininskiy radius is decentralized. It is provided by 6 underground, integrated step-down traction power stations. With the goal of improving the reliability of the electric power supply, each station is provided power from two independent sources of the Moscow Regional Administration of Power System Management.

Traffic organization initially provides for dispatching 30 pairs of 6 trains per hour. Maximum dispatching capacity, up to 48 pairs of 8-car trains per hour, will be reached after the completion of construction of the Kiyevsko-Kalininskaya line.

As is the case on all lines of the Moscow subway, the architectural and artistic make-up of the stations on the Kalininskiy radius has been given great attention. The construction of the stations provided the architects and artists with many possibilities for creativity. And they made successful use of them. The residents of Moscow are acquiring 6 new and beautiful subway station-palaces.

The architectural make-up of the "Marksistskaya" station was carried out according to a design by the architectural collective consisting of N. A. Aleshina, V. S. Volovich, N. K. Samoylova and R. P. Tkacheva in cooperation with the artist M. N. Alekseyev. The columns of the subway station are faced with marble of a red hue and the passageway walls with marble ranging from pink to light gray. The granite floor is light gray with reddish patterned inserts. There is a decorative panel on the front wall of the middle hall and on the passageway walls done in the style of a Florentine mosaic and symbolically representing the ideas of Marxism.

The compositional theme of the pylon station "Il'ich Square" is determined by the name of the station. On the front wall of the middle hall there is a high relief of V. I. Lenin on a red banner background done by the sculptor N. V. Tomskiy. The pylons are in the form of blocks which have been faced at the top and bottom and covered with dark red marble. The passageway and platform walls are finished in white marble. The creators of this composition are the architects L. N. Popov, V. I. Klokov and I. G. Petukhova.

The basis for the architectural composition of the column station "Aviamotornaya" is a double row of arcades faced with white marble. The passageway walls are finished in marble ranging from light gray to pink. The base of the passageway walls is done in dark granite. Along the middle hall are two rows of fluorescent lights for illuminating the arcades. The compositional theme is "The Working Class of the USSR is the Creator of Great Soviet Aviation." The panel on the front wall of the middle hall and on the passageway walls was prepared by the architectural collective consisting of A. F. Strelkov, V. I. Klokov, N. I. Demchinskiy, Yu. A. Kolesnikova and the artists A. M. Mosiychuk and E. I. Rysin.

The station "Highway of Enthusiasts" was finished according to the design by Yu. V. Vdovin, V. A. Cheremin and the artist A. N. Kuznetsov. The theme 'The Historical Past" was not selected without purpose. The highway of Enthusiasts, the former Vladimirka, is the route along which thousands of the best people of tsarist Russia were driven to Siberia, to prison and into exile. At the back of the station is a panel dedicated to this theme.

The color composition is a combination of light tints on the walls of the passageway tunnels and pylons finished in red marble. The floor is made of gray and red granite. The subway station is illuminated with lights placed behind the cornice at the base of the roof, which creates the visual impression of greater space.

The single-arched station "Perovo" is finished according to the design by the architects N. A. Aleshina and V. S. Volovich and the artists L. A. Novikova and V. A. Filatov. The compositional theme is "The Natural Environment." The artistic inserts in the passageway walls and the inscriptions are stone carvings. The slab ceiling is supported on walls faced with white marble and with a dark granite base.

The "Novogireyevo" station was constructed with an increased column spacing of 7.5 meters. Due to this the volume of the hall is expanded and good visibility is provided. The walls are faced with light gray marble and decorated with artistic inserts and the columns are covered with white marble. The floors are finished in red and brown granite. The architects R. I. Pogrebnoy and I. V. Plyukhin worked on the finished composition of the "Novogireyevo" station.

During construction of the radius there were continued improvements in subway construction and station building equipment and new machines and mechanisms and new, advanced processing methods were put into use. Six shafts of the nine which intersected the unstable, water-bearing rock were built using an advanced method of sinking supports in a thixotropic jacket. The use of this method, in comparison with the usual chilling, has made it possible to lower labor expenditures by a factor of 4. There was a simultaneous improvement in work safety due to the fact that the work was done without people in a bottom hole.

The column stations with deep foundations on the Kalininskiy radius are similar in construction to the "Pushkinskaya" and "Kuznetskiy Bridge" stations but differ in the greater width of the middle hall, and this is much more convenient for passengers. The single-arched station "Perovo" was built using the industrial concrete slab method utilizing movable, mechanized concrete forms. The "Novogireyevo" station was constructed of enlarged units with a span of 7.5 meters instead of the usual 6 meters. Due to this, labor expenditures during construction were reduced by 500 man-days.

A difficult situation arose during construction of the section between the "Highway of Enthusiasts" and "Perovo" stations, where the tunnels, coming from a deep foundation to the outside, crossed semistable, water-bearing rock. In the engineering plan this section was to be built using the caisson method with compressed air. And this required the construction of expensive caisson equipment, the preparation of specially trained workers capable of working in an area with compressed air and the building of a large compressor station.

The group of engineers from the State Planning and Surveying Institute for the Construction of Subways and Transportation Facilities and from the State Administration of Construction of the Moscow Subway, after careful study of the hydrogeological conditions, proposed constructing this section utilizing so-called contour chilling based on the construction experience of the Rizhskiy radius. This was the method employed.

The entire section, amounting to 445 meters and passing through unstable rock, was divided into 14 parts which, in strict sequence, were chilled along a sealed contour from the surface to the underlying water-confining rock layer. The water was pumped from the contour using needle strainers and then the tunnel was built through the section. Compressed air was used to speed up water removal.

The use of contour chilling permitted a significant reduction in the period of construction and a savings in labor expenditures.

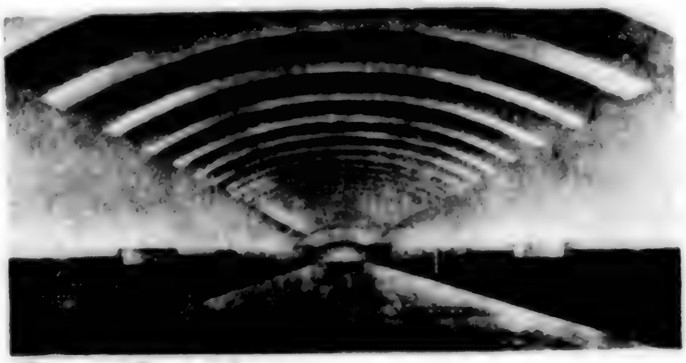
In construction of the Kalininskiy radius there was successful utilization of the mechanized tunneling machine ShchMR-1 for operation in rock up to 350 kg/cm^2. More than 1.4 kilometers of tunnel were built using it.

The subway builders completed testing under working conditions of the mechanized tunneling unit, equipped with the operating attachments for excavating, in tunneling in clay and sandy ground. It demonstrated high productivity, up to 2 meters per shift. Moreover, due to utilization of the tunneling machine, manual labor in processing and removing rock was eliminated. The decision was made to produce two more such mechanized tunneling units for the construction of future lines.

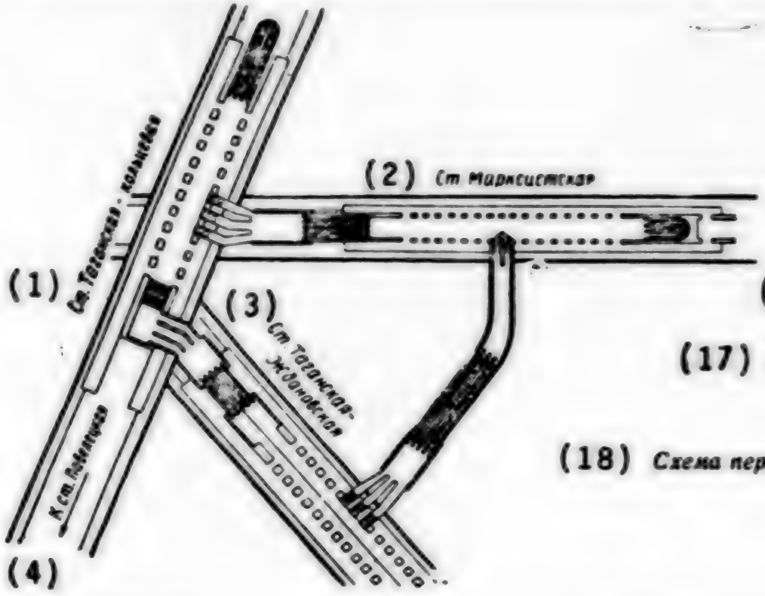
With the initiation of use of the Kalininskiy radius, the total length of the capital's subway reached 193.3 kilometers with 114 stations.

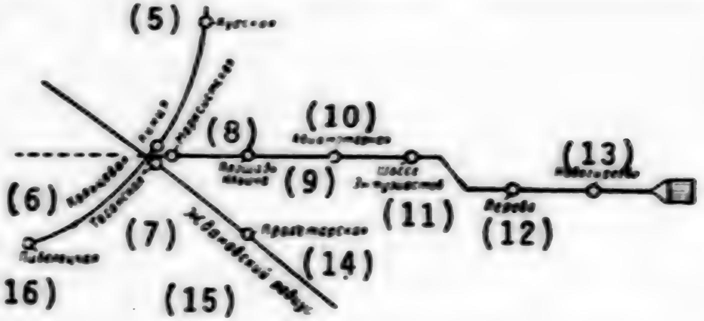
The construction of new lines in the capital continues. Tunnels are being drilled on the Serpukhovskiy radius from the "Dobryninskaya" station in the direction of Chertanov, a distance of 13.8 kilometers. Work has begun on extending the Zamoskvoretskiy radius from "Kashirskaya" station to the Borisovo-Brateyevo area, a distance of about 10 kilometers. These line will be put in use during the 11th Five-Year Plan.

"Marksistskaya" station



"Perovo" station





(17) *Схема Калининского радиуса Московского метрополитена.*

(18) *Схема пересадочного узла на станции «Марксистская».*

Key:
(1) Taganskaya station - Belt Line
(2) Marksistskaya station
(3) Taganskaya-Zhdanovskaya station
(4) To Pavletskaya station
(5) Kurskaya station
(6) Belt line
(7) Taganskaya station
(8) Marsistskaya station
(9) Il'ich Square
(10) Aviamotornaya station
(11) Highway of Enthusiasts station
(12) Perovo station
(13) Novogireyevo station
(14) Proletarskaya station
(15) Zhdanovskiy radius
(16) Pavletskaya station
(17) Diagram of the Kalininskiy radius of the Moscow Subway
(18) Diagram of the transfer junction at "Marksistskaya" station

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11220
CSO: 1823

DELAYS IN PASSENGER SERVICE CONTINUE

Moscow GUDOK in Russian 13 Jan 80 p 1

[Article entitled: "The First Ten Days of January: The Delays Continue"]

[Text] The beginning of January did not make anyone happy; 1,638 passenger trains were delayed over the system during the first ten-day period. The most gross schedule disruptions again occurred on the Kemerovo, Azerbaijan, Moscow, West Siberian and Privolzhskaya Systems. Trains were delayed most frequently by fault of track maintenance workers. The main causes were the presence of speed restrictions not anticipated by the schedule.

Thus, on 3 January five trains were delayed from 30-45 minutes each on the Privolzhskaya System because of track workers, and on 7 January five trains were off schedule on the Baku Division of the Azerbaijan System.

The railroad workers of the Odessa System were not prepared for the snows. A disruption of the schedule was also allowed because snow was not removed from switches on time.

Many passenger-train delays occurred because workers of the Car and Locomotive Maintenance Service were at fault. On 8 January 10 trains were delayed from 1.5-5 hours each on the Golutvin-Peski section of the Moscow System because of a defect in one car of a freight train. On 9 and 10 January 34 passenger trains were disrupted from schedule because they were not supplied with water and coal on time.

About 300 trains were off schedule because they were not received by neighboring sections and lines. The position on the Kemerovo System is particularly unfavorable with regard to this question. Here only 68.5 percent of the trains proceeded on schedule.

At the same time, a number of lines were successfully coping with the lapse of passenger trains. The collective on the Krasnoyarsk Mainline achieve 100-percent fulfillment of the schedule. Things are going well on the Oktyabr', Pribaltiyskaya and Zabaykal'skaya Lines. The situation on the Gor'kiy Line has improved; the number of violations has dropped off sharply here.

9194
CSO: 1829

RAILROAD

NEW MAGNETIC SUSPENSION FOR RAILROAD CARS DESCRIBED

Moscow ZHELEZNODOROZHNYY TRANSPORT in Russian No 11, 1979 pp 48-49

[Article by Candidate of Technical Sciences Ye. M. Frishman: "A High-Speed Car with Magnetic Suspension"]

[Text] As is known, the achieving of speeds of above 250-300 km per hour for railroad cars involves significant technical difficulties and economic expenditures. The problem of increasing the speed of passenger transport under ground conditions up to 400 km per hour can be solved by using magnetic suspension cars.

The basic purpose of developing high-speed ground transport (HSGT) on magnetic suspension must be seen in handling the ever growing passenger traffic on a number of heavily traveled routes (of the "city-to-city," "city-to-airport," "city-to-suburb" and other types) and reducing the travel time for the passengers. It is not excluded that in certain instances it would also be advisable to use such transport for freight shipments as well.

The work of developing magnetic suspension cars is being carried out in several areas, and this can be realized by different methods. A comparative analysis of the proposed methods of magnetic suspension at present can be only of a preliminary sort. The results of the research conducted both in our nation and abroad indicate that there must be a profound and thorough analysis of the technical and economic indicators for all the possible methods of magnetic suspension.

Here it is also necessary to consider the possible sphere of use of the HSGT. Over long distances one method of suspension may be more promising (for example, electrodynamic), or another (for example, electromagnetic or on permanent magnets) for transport ties of the "city-to-suburb" or "city-to-airport" types. Substantial results from a comparative analysis of the methods of magnetic suspension of the cars can be obtained in the stage of manufacturing and testing the experimental models or mock-ups of the track and the car on a magnetic suspension.

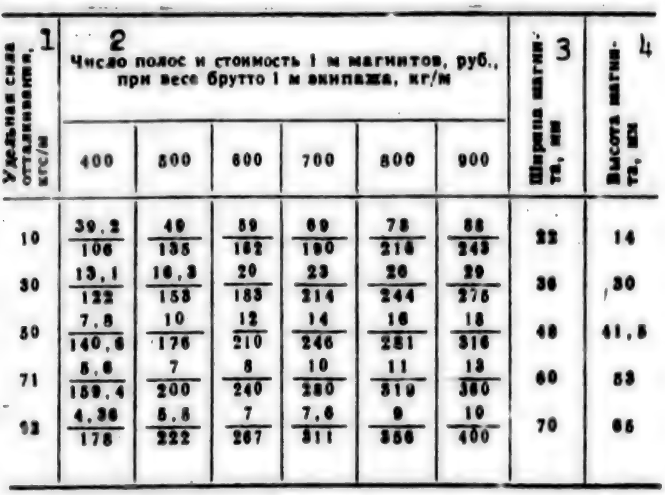
Let us examine the basic results of research on a system of magnetic suspension for a car on permanent magnets as conducted by the Belorussian Institute for Railroad Transport Engineers (BelIIZhT).

The vertical forces which provide for the levitation of the car are created by the interaction of magnetic strips placed on the track and on the car. For these purposes magnets made from barium ferrite can be used. As theoretical and experimental research has shown, the magnetic strips on the track and on the car must be located with an alternation of polarities. Here the repulsive force is increased by 1.3-1.5-fold in comparison with when the interaction of the adjacent poles is not considered.

In using magnetic circuits which reduce the stray flux, it is possible to achieve a further increase in the repulsive force of the magnets. However, in this instance the question of stabilizing the car in a horizontal plane may be decisive, since the cross-forces which destabilize its position increase with the use of magnetic flux concentrators.

For reducing the consumption of magnetic materials and the number of magnetic strips on the track and the car, it is essential to find the optimum dimensions of the magnets. The task is to determine the values of the width and height of the magnet whereby its sectional area is minimal with the set amount of the proportional repulsive force of the two magnets (magnetic strips) and the amount of the working clearance between them. The basic results of solving this problem for a working clearance of 10 mm between the car and the track are given in Table 1.

Table 1



1 Удельная сила отталкивания, кгс/м	2 Число полос и стоимость 1 м магнитов, руб., при весе брутто 1 м экипажа, кг/м						3 Ширина магнита, мм	4 Высота магнита, мм
	400	500	600	700	800	900		
10	$\frac{39,2}{106}$	$\frac{49}{135}$	$\frac{59}{162}$	$\frac{69}{190}$	$\frac{78}{216}$	$\frac{88}{243}$	22	14
30	$\frac{13,1}{122}$	$\frac{16,3}{158}$	$\frac{20}{183}$	$\frac{23}{214}$	$\frac{26}{244}$	$\frac{29}{275}$	36	30
50	$\frac{7,8}{140,6}$	$\frac{10}{176}$	$\frac{12}{210}$	$\frac{14}{246}$	$\frac{16}{281}$	$\frac{18}{316}$	48	41,5
71	$\frac{5,6}{159,4}$	$\frac{7}{200}$	$\frac{8}{240}$	$\frac{10}{280}$	$\frac{11}{319}$	$\frac{13}{360}$	60	53
92	$\frac{4,36}{178}$	$\frac{5,5}{222}$	$\frac{7}{267}$	$\frac{7,6}{311}$	$\frac{9}{356}$	$\frac{10}{400}$	70	65

Key: 1--Specific repulsive force, kg/m; 2--Number of strips and cost of 1 m of magnets, rubles, with gross weight of 1 m of car, kg/m; 3--Width of magnet, mm; 4--Height of magnet, mm.

Here values have been given for the cost of 1 m of magnetic length placed on the track and on the car (the denominator). The cost of 1 kg of magnet from barium ferrite is considered equal to 2 rubles. In the opinion of specialists, under certain conditions, this figure could be reduced by more than 2-fold.

In examining the problem of magnetic suspension for cars using permanent magnets, one of the central questions is selecting the amount of the effective clearance between the magnets of the track and the car. Here the basic criteria are providing safe traffic without the colliding of the track and the rolling stock (the working capacity of the clearance, the comfort of the passenger trip (according to acceptable accelerations), and the reduction in the consumption of magnetic materials. Of the listed criteria, the basic one is travel safety. This criterion is closely related to the comfort of the journey, as both questions are solved on the basis of studying the dynamics of the car.

In investigating the workability of the clearance, the car is viewed as a two-mass system consisting of the undercarriage with the magnets and the body. The body and the undercarriage are flexibly connected by shock absorbers. The undercarriage is considered an absolutely rigid body.

On the basis of analyzing the vertical dynamics of a car weighing 35 tons and a length of 27 m (the weight of the undercarriage is 15 tons), it was established that in traveling at speeds of up to 400 km per hour, conditions are provided for the safe and confortable travel of the passengers. With an effective clearance of 10 mm corresponding to an equilibrium position of the car, the height of track irregularities can reach 5-6 mm with a distance of 9-12 m between the supports of the trestle track (the length of the irregularity). Resonance vibration frequencies occur in the car at speeds on the order of 13 and 60 m per second.

For the suspension system using the repulsive forces of permanent magnets, the question of the stabilization of the car is of important significance. The use of mechanical stabilization is undesirable under normal operating conditions for the designated transport system. The stability of the car in the horizontal plane can be provided using controllable electromagnets. In this instance a sufficient rigidity of car stabilization is achieved with the various loads and disturbing actions. The experimental research carried out has affirmed the fundamental possibility of creating a car suspension with permanent magnets and an electromagnetic guide system.

Cross-stabilization of the car can also be provided by the electrodynamic method using permanent magnets. This derives from the results of an experiment to determine the normal component force of the interaction of the magnetic fields ($F_{\bar{i}}$) created by the permanent magnet which moves relative to the conducting strip and is guided by the eddy currents in it. In the process of the experiment, the relative speed was approximately 360 km per hour. Above the turning Duraluminum drum which simulated the track current-conducting bed was placed a samarium cobalt magnet in the form of a rectangular paralleloped. The ratio of Fi to the weight of the magnet with a clearance of 10 mm equaled 7. This shows the possibility of achieving an electrodynamic suspension of the car in using the samarium cobalt magnets.

The BelIIZhT has carried out the preliminary designing of an autonomous car and track for the HSCT. As a result of analyzing various proposals made by Soviet and foreign specialists, it was decided to locate the car above the track which would be laid on trestles. It was also decided that the capacity of the car for long distance routes would be 75 persons, and aluminum alloys would be used as the basic structural material or the bearing elements of the car body.

Table 2

Indicators	Variation of body design	
	Car type	Aircraft type
Number of passengers	75	75
Outside length, m	27.5	20
Outside width, m	2.9	2.67
Number of seats in row	4	4
Spacing of seats, mm	1,000	7,500
Weight of passengers with baggage, kg	7,500	7,400
Weight of body with passengers, kg	14,530	13,700

For reducing the fundamental tone of the frequencies of vertical oscillations (4-7 hertz depending upon the load and the clearance), it was necessary to incorporate in the car's design a secondary suspension with flexible elements located between the body and magnets of the car (the body--undercarriage system). The incorporation of a secondary suspension helped to reduce the dynamic effects on the body and on the track. The damping of vertical oscillations was also possible by installing shock absorbers in parallel with the flexible elements. Certain parameters of the body are given in Table 2.

The design of the undercarriage and its parameters are directly dependent upon the suspension system, the placement of the traction motors, the stabilization method and other factors. On the one hand, the frame of the undercarriage should be rigid, and on the other, the clearance between the track and undercarriage magnets should be at least 10-15 mm with the presence of technological deformations of the frame and the allowable track irregularities. These two contradictory requirements could be satisfied by creating an undercarriage frame which operated like a track, or a rigid frame with magnets on flexible connections. The weight of the designed undercarriage together with the permanent magnets, the electromagnetic guide system and the other equipment is approximately 15 tons.

In designing the HSGT system, it was decided that the track would be placed on a trestle. Here two variations of the trestle were examined: open and enclosed. As a result of preliminary calculations, it was established that the optimum (in terms of cost and expenditure of materials) length of the span for an open reinforced concrete trestle equals 9-12 m. The track superstructure is blocks with magnetic strips fastened to them. The length of the individual block equaled 2 m; its position can be adjusted in the plan and profile view. In the central part of the track is located the passive part of a one-sided linear asynchronous motor.

The examination of the second variation should be carried out considering the possible placement of a vacuum pipeline on the trestle. In this instance it may be possible to use a linear asynchronous motor with the active part on the track. Here resistance to movement would be sharply reduced and the speed of the cars could be increased in comparison with the first variation.

An evaluation of the cost of the open trestle for one-way traffic was made considering the cost of the track superstructure, including the permanent magnets. As a result of the calculations, it turned out that the cost of 1 km of such track would be approximately 900,000 rubles.

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10272
CSO: 1823

TRANSPORT PROBLEMS IN KUYBYSHEVSKAYA OBLAST

Moscow TRUD in Russian 8 Feb 80 p 2

[Article by O. Konovalenko, chairman of the commission in charge of coordinating the different types of transportation in Kuybyshevskaya Oblast and deputy chairman of the oblispolkom: "Efficiency of the Transport Conveyor--Efficient Organization of Transportation in Kuybyshevskaya Oblast Frees Thousands of Railroad Cars"]

[Text] In the economic structure of our country, transportation is of great importance. In many respects, the operational efficiency of the enterprises and associations is dependent on transportation. At the November (1979) Plenum of the CPSU Central Committee, attention was drawn to the need for decisive improvements of transportation, above all of rail transport.

These problems are also very urgent for the Kuybyshevskaya Oblast, a large transportation center. To solve these problems, the oblispolkom [executive committee of the oblast soviet of workers' deputies] set up a commission for the coordination of the different types of transportation. The commission is made up of party, soviet and trade union members, leading representatives of rail, motor, water and air transport, specialists of the planning and supply organizations, and scientists. With such a composition, it is possible to make a thorough analysis of the state of affairs, draw up practical recommendations and supervise their implementation.

The analysis has shown, for example, that within the oblast a lot of freight is hauled over short distances. These operations involve the daily use of 190 railroad cars. Is this kind of transport organization efficient? Is it not simpler to move these loads by motor vehicles, including vehicles passing through? It turned out that this would be possible and that transferring just some of the shipments to motor transport (including vehicles passing through) would produce considerable results. The railroad was thus relieved of shipments of packaging materials, bearings, bricks, crushed rock ... Last year, a total of 70,000 tons of freight was transferred to motor transport and on account of this transfer, 1,680 railroad cars were released for other needs.

Furthermore, studies have shown that 289 freight-carrying railroad cars run parallel to waterways. At the request of the commission, the administration of the Kuybyshev Order of Lenin Railroad and the river ports of Kuybyshev, Tol'yatti and Syzran' worked out measures designed to curtail shipments moving parallel to waterways. In 1979, the river transport workers took 94,000 tons of freight from the railroad workers, thus releasing 3,174 railroad cars.

Quite frequently, the existing inefficient transport system becomes so habitual that it does not even occur to anyone to change it. A telling example of this is the delivery of 10,000 tons of sugar beets to the Timashevsk sugar combine. It proved sufficient to expand the beet storage spaces near the combine to implement direct motor transport from the beet farms, bypassing the beet center [illegible] Kabanovo and Tolkay and forgoing the services of the railroad.

Thus, owing to the rationalization of transportation, the strain on rail transport is successfully eased.

Of great urgency in the oblast is the problem of providing the southern agricultural rayons with petroleum products. The commission considered various ways of solving this problem and consequently recommended to establish at the rayon center of Privolzh'e a permanent anchorage and to transport the petroleum products to this berth not by motor, but by river transport. This berth is presently being built.

A more basic solution to this problem is the development of pipeline-based transport. We were the first in the country to start construction of a circular pipeline system for providing the petroleum bases with fuel. Measures have been worked out for the construction of offsets (overall length 340 kilometers) from the Ufa-West main pipeline to six large oil bases. This will make it possible to relieve the railroad workers of shipments of petroleum products totaling 100,000 tons. Last year, the management of the pipeline under construction and the "Kuybyshevtruboprovodstroy" [Kuybyshev Pipeline Construction] trust started work on two branches; presently, construction has begun on another four offsets.

The largest specialized river steamship line in the world--the "Volgotanker" line--is based in Kuybyshev. For the period from 1979 to 1981, the commission confirmed a long-range plan concerning the renovation of all petroleum anchorages in the oblast; this will make it possible to improve the utilization rate of the oil tanker fleet. The "Volgotanker" steamship line, the Kuybyshev administration of the RSFSR Goskomnefteprodukt [State Committee for Petroleum Products], and the "Kuybyshevnefteorgsintez" [Kuybyshev Production Association for Processing of Oil and Production of Organic Synthesis Products] production association participated in the drafting of the measures. Thanks to the modernization work carried out last year at the association's buffer base, it is possible simultaneously to pipe two grades of mazut [fuel oil] from two oil-refining plants into two tankers and two lighters. Thus it was possible last year to increase the shipment of fuel oil by 1.4 million tons, and the shipment of white oils, by 150,000 tons. The railroad was relieved of shipments of petroleum products totaling 500,000 tons. Similar operations are carried out at the berths of the Syzran' oil-refining plant and the Oktyabr'skiy petroleum base.

Our oblast is crossed by the Volga and a number of its tributaries. For this reason, many organizations have been ordered to work out and submit for consideration by the oblast commission measures aimed at expanding waterway-based transport and developing new freight flow lines, especially on small rivers.

The oblast production administration for grain products is engaged in solving the problem concerning the supplementary shipment by river transport of 300 to 400 tons of grain per year, which appears to be feasible.

The river transport workers of the ports of Kuybyshev and Tol'yatti and the Kuybyshev railroad workers are actively engaged in assimilating the know-how of the Leningrad transport workers, in reducing the time needed for processing the ships and the railroad cars. There is developing an all-round socialist competition among the collectives of the ports, stations and motor transport enterprises. The trade union committees of the transport workers pay a great deal of attention to the development of this competition. As a result, the Kuybyshev port alone showed a 10-percent increase in the volume of freight transshipment by the most advantageous, direct method--from the hold into the railroad car or the truck. The processing times for ships and railroad cars have been reduced. At the ports and in the associated enterprises, coordination groups have been established.

In collaboration with the trade union organs, the commission is engaged in further improving the all-round competition among the associated enterprises. These bodies are working on the problem of establishing at the Kuybyshev, Tol'yatti and Syzran' transport centers complex brigades made up of rail-, river- and motor-transport workers and distinguished by a unified economic incentive system.

A great deal is being done for the improvement of motor transport. For grain shipments in three rayons of the oblast, Middle Volga Transport Administration has been employing daily operations planning involving electronic computers. On account of this approach, it has been possible here to achieve greater efficiency in motor transport as well as systematic utilization of the loading and unloading equipment. The idling of motor vehicles has been reduced; the output per truck trailer train has increased by nearly one-third and savings amounting to 244 tons of fuel and lubricants have been realized. We have now proposed to introduce daily operations planning in nine rayons.

Naturally, it would be wrong to assume that all of our problems have been solved. This is by no means the case. It still happens quite frequently that the railroad cars and ships come in late for loading and unloading; the work schedules are not always observed. To cite a case in point: Due to the lack of constant freight flow and the inefficiency of the transport line, the utilization time for mechanized equipment in the Kuybyshev port amounts to a little over 20 percent. The commission has been trying to solve these and other problems.

Unfortunately, the solutions of the commission are merely recommendatory; in our opinion, they should be obligatory, if only in our oblast.

We have quite a few complaints about the ministries which frequently do not solve the problems at hand. To cite one of many examples: The Perevolok ferroconcrete construction plant of the Ministry for Transport Construction, which is located on the shore of the Usinsk bay of the Kuybyshev reservoir, receives from riparian quarries 42,500 tons of crushed rock, and from the Tol'yatti river port (10 kilometers along the river), 70,000 tons of sand. This huge quantity of materials is hauled by rail, just as 52,000 tons of the plant's finished products are shipped by rail to the cities in the Volga, Kama and Don basins. We suggested to the ministry to build an anchorage at the plant, which would allow reception and shipment of materials and products by water. However, this problem was never solved.

The problems involved in increasing the efficiency of transportation must be solved in a complex way. They must be studied by both the regional and the sectorial organizations. This is a concern shared by all of us.

8760
CSO: 1823

UKRAINE'S RAILROAD SYSTEMS EXPERIENCE DELAYS

Kiev PRAVDA UKRAINY in Russian 5 Oct 79 p 2

[Transportation log: "Reinforce the Cooperation of Allied Workers"]

[Text] Accelerated train traffic is now the principal condition of an upsurge in the work of railroad transportation. This is well understood by the traffic controllers of the Ukraine's main lines.

Let us take the Komsomol-youth shift of Senior Railroad Traffic Controller Ye. A. Nesmeyanov of the Donetskaya Line. The collective aspires to dispatch and advance the rolling stock strictly according to schedule and to insure for periods of the day the rhythmic transfer of unit trains to neighboring main lines. The shift's workers are constantly searching for and commissioning production potential.

It is now necessary to develop competition particularly assiduously under the motto "The Railroad Crossing Gates--Wide Open!" establish a more precise system for comprehensively planning the operation of junction points and unswervingly fulfill the quotas for shifting the cars. Yet such an important problem is still not being solved properly on the Southwest, Southern, Odessa and L'vov lines. The techniques of the delivery process are disrupted here and the percentage of fulfillment of freight-train traffic schedules on their sectional and open-line runs is low. The poor maintenance of the locomotives and cars, unnecessary speed restrictions and so forth are reflected here.

Success in the struggle for the efficiency and quality of transportation is inconceivable without the railroad workers' close contacts with their allied workers--seamen, rivermen, motor-vehicle operators and workers of the access tracks of industrial enterprises. This is why it is necessary to introduce more extensively the experience of the Leningrad and Chelyabinsk workers approved by the CPSU Central Committee. Unfortunately, there has been a deterioration recently in interaction among the Odessa transportation workers. Ships of the Black Sea Shipping Company are condemned to long, idle periods because of the shortage of cars. The motorship "Kreml'," for example, spent 95 ship-hours in port waiting for an empty car.

For several years running the collectives of the Pridneprovskaya Mainline's Berdyansk Station, the sea port and the "Soyuzvneshtrans" Office have concluded contracts for comprehensive socialist competition. But they exist only on paper. In the second quarter the station fulfilled the loading plan 80 percent, and the idling of rolling stock was overestimated by 3.3 hours. Both the railroad workers and the Azov Merchant Shipping Company are letting each other down. The coordination council which has been set up in Berdyansk is monitoring the action of the allied workers inadequately.

A number of enterprises employing the services of the Southern Line are permitting considerable losses of loading resources. But the proper measures for eliminating the shortcomings are not being adopted. The car dumper and ramp have long been out of commission at the Balakleya Cement-Slate Combine (director--Comrade Dem'yanenko), for example. Several thousand holders for packing slate are not being used. For this and other reasons the enterprise has lost more than 3,170 cars in 8 months. Idling at the Panyutino Car-Repair Plant also has been overestimated eightfold compared with the norm.

The L'vov Branch has long been disrupting the feed of rolling stock to enterprise access tracks, and the empty cars are not picked up here in good time. Above-norm idling during loading operations is great. Each car is held up for a period more than double that of the norm at the L'vov Insulator Plant, for example.

This interaction of the allied workers is having a negative effect on the use of transportation facilities. The car-idling norm on the sidings of the L'vov Branch is exceeded by 0.3 hours, of the Ternopol' Branch by 0.2 hours, of the Rovno Branch by 0.5 hours and of the Ivano-Frankovsk Branch by 0.3 hours.

Sugar beets are flowing along the republic's steel tracks. The largest volume of shipment of the sweet root is on the Southern Line. The nature of the transportation has changed here this year. The construction of a new plant in the Poltava region and the increased capacities of the operating facilities for processing the raw material have increased the proportion of intraline transportation. The beet is delivered mainly by revolving doors formed chiefly from gondola cars with built-up sides.

The gondolas are in very short supply. They are extremely necessary for delivering fuel to winter reserves, ore and metallurgical raw material and other products to industry. For this reason it is extremely important to strive for their highly efficient use. The revolving doors really must revolve in accordance with accelerated schedules. The CPSU Central Committee and USSR Council of Ministers decree "Additional Measures To Secure the

Timely Harvesting, Shipment and Processing of Sugar Beets for the 1979 Harvest" makes concrete recommendations on how to manage the rolling stock with the greatest effect.

Unfortunately, the problem is not being solved successfully everywhere. In the first 6 months alone 39,286 technically defective transportation units were received at technical-maintenance centers and other servicing sections of the car barn of Kremenchug Station. Among these were many gondolas with broken bolsters, bodies and so forth.

A most important task of all workers of the steel tracks is to reinforce discipline, pick up the necessary tempo and overcome the lagging. All state quotas for the shipment of national-economy freight must be met.

8850
CSO: 1823

RAILROAD

CONTAINERIZED CARGO DELAYS IN GEORGIA

Tbilisi ZARYA VOSTOKA in Russian 11 Aug 79 p 2

[Article by S. Barbakadze: "The Containers Have Become Warehouses"]

> [Text] An increase in the growth rate of industrial production in the republic and in the volume of the manufacture of consumer goods has complicated to a considerable extent the solution of problems of transporting products and has set the tasks for transportation workers, whose accomplishment is conditioned by a whole number of factors. A most important factor is an improvement in the organization of container and package shipments.

The freight service of the Transcaucasus Railroad receives dozens of letters and cables daily in which industrial enterprise managers warn of an acute shortage of containers for shipping their manufactured products to their customers. The situation is becoming acute--the freight really cannot be loaded. But we have to.... And the managers begin to feverishly seek other paths. They are found, of course, but they rarely prove optimal. It has come to the point where, for example, for several months now the Kutaisi Garment Production Association imeni Kirov has been dispatching the finished product to Moscow, Kiev, Rostov and other distant cities of the country by motor vehicle. The garment workers are aware, of course, what such shipments cost: they are almost three times as costly as railroad shipments. But the association goes along with this: the overfilled factory warehouses have to be emptied somehow. And contractual commitments have to be met, also.

What is wrong? Why are the products which have accumulated in the warehouses of many of the republic's industrial enterprises not shipped out in good time, and why do customers not receive goods within the time limits determined by the contracts? There are many reason for this. Both objective and subjective. In order to delimit them right away and determine the main thrust of the discussion let us cite the following information: in

6 months of this year the Transcaucasus Railroad failed to receive from other main lines over 20,000 containers (here and elsewhere we employ the conventional computation for the container balance). But in this same period the pool of containers in the republic exceeded the technical norm by 400 units daily on average.

The result? On the one hand an acute shortage of containers for shipping products out and, on the other, "surpluses" thereof building up at the industrial enterprises and main line station? Yes, precisely so. And there is no paradox here. Here is a typical example which explains much.

The Tbilisi "Isani" Footwear Production Association is frequently short of containers for dispatching its products to its customers. However, as a check revealed, in the same association 7 containers stood idle for more than a year, essentially having become warehouses for raw material surpluses. Yet this number of containers would have been perfectly sufficient for the association to have satisfied local shipment requirements for 1 month.

This is a far from isolated example. AT the Tbilisi Knitwear Factor No 3 some 30 containers stood idle over and above all norms in July alone; 17 stood idle at the Silk Production Association and so forth.

In order to get a clearer idea of the picture which has developed in the use of containers let us say further that recently 10 Tbilisi enterprises of the republic Ministry of Light Industry had to pay fines totaling R25,540 for the above-norm idling of 2,047 containers. Big sums in fines for holding over containers are also paid to the railroad by enterprises and organizations of the republic ministries of trade and local industry, the Georgian SSR Gossnab and a number of other departments.

So it transpires that while demanding from the railroad workers the fixed quantity of containers our managers are at the same time doing nothing to have them released in good time and thereby accelerate their turnover rate and increase the efficiency of their use. Instead of organizing a precise work rhythm for loading-unloading brigades and putting warehouse operations in order, they are, in violation of existing directives, unloading form the motor vehicles the containers addressed to them and converting them into warehouses. But they are paying for their lack of organization with resources from the state pocket.

With every passing day there is an increase in the fines paid to the railroad, but this is not making for quicker container turnover. The following regular pattern may be revealed with the aid of elementary calculations: if for the above-norm idling of 7 containers for more than a year at the same Tbilisi "Isani" Footwear Production Association the management transferred to the railroad's account R5,000, the loss incurred by the state because of the removal of these containers fromcirculation was in excess of R10,000. This arithmetic evidently merits serious thought.

There are also serious losses in the use of the container pool because of miscalculations in industrial enterprises' planning of product shipments. This, in turn, involves an overestimate in the applications to the railroad for containers, which leads to a reduction in the efficiency of the operation of the transportation assembly line as a whole and increases unproductive expenditure and, what is most important, deprives the railroad station workers of the possibility of maneuvering the container pool more rationally. Thus in 6 months of this year the Tbilisi Knitwear Factory No 2 failed to make use of 96 containers which it had received, for which it paid a fine of R310. The Kutaisi Woolen Cloth Factory paid the railroad R420 for the underloading of 106 containers. In just 6 months the management of this enterprise overestimated the applications by 561 containers. In the first 6 months these and a number of other enterprises of the republic Ministry of Light Industry overestimated the applications by more than 5,800 containers and paid the railroad fines totaling R4,200.

Incomplete loading of the container capacities is also hindering the efficient use of the container pool. Enterprises of the Tbilisi "Gruzelektromash" Production Association and the "Potielektroapparat" Plant are particularly guilty of this. During a check in the "Gruzelektromash" Association, in particular, the inspectors discovered that one container ready for shipment was underloaded to the extent of 950 kilos and two others to the extent of 1,100 and 1,750 kilos respectively. Yet full use of the capacity of these three containers would have enabled the association to additionally load one further container....

Decrees have been adopted in the republic in recent years aimed at a further improvement in the delivery process and the timely loading and unloading of railroad cars and containers, and particular attention is paid in these decisions, moreover, to the organizatio of two- and three-shift work on emptying and loading railroad rolling stock at the enterprises. Yet the majority of them cease loading-unloading operations after 18 hours. What this leads to is well known--the cars and containers pile up at the railroad stations, and this, in turn, prevents maneuvering operations, upsets the rhythm of the delivery assembly line and also leads to palpable losses in the use of containers.

Blunders by the railroad workers themselves also hinder matters. The loading mechanisms have not yet been properly regulated everywhere at the stations and container centers, and the as yet insufficiently precise organization at a number of stations of the notification of the clientele of incoming freight is giving rise to complaints on the part of the recipients of the freight. The schedule for the delivery of containers is still being violated at the stations from time to time, the plan for switching cars with containers is not always precisely adhered to....

The practice of the work of the best industrial enterprises, organizations and railroad stations operating in close labor collaboration and struggling for the precise fulfillment of their contractual commitments shows that it is possible to avoid losses in containerized fright shipments. For this it is only essential for each manager to understand that stocks in containers on the territory of the enterprises or organizations they head are unprofitable. Just as the fines paid for miscalculations in the use of containers are unprofitable. It is profitable to accelerate the turnover of containers to the utmost. There would then be no need to send anxious cables concerning a shortage of them.

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CSO: 1823

RAILROAD

COAL HAULAGE IN KEMEROVSKAYA OBLAST

Moscow GUDOK in Russian 2 Nov 79 p 2

[Article by I. Golovachev, deputy chairman of the oblast People's Control Committee: "Potential of the Coal Conveyor"]

[Text] The Kemerovskaya Line has only been in operation for just over 6 months. A short time, but a considerable amount of organizational work has been performed here in this period. Transportation techniques are being perfected and the efficiency of the use of carrying and throughout capacity and the operating reliablity of the locomotives, cars and power-supply installations and automatic machines is increasing at all branches. The coal-loading stations and track facilities in particularly intensive sectors are being modernized.

The quality of the line's work is evaluated primarily according to the level of the loading of coal, for it accounts for 67 percent of all transported freight. However, since the start of the year the railroad workers have fallen more than 12 million tons of fuel short, and this debt is continuing to grow.

The main line currently has sufficient cars. The trouble is that they have markedly reduced their runs recently. Not one branch satisfied the main requirement--car turnover. The data from our investigations shows that this is the result of lack of organization and responsibility and violations of production and technological discipline. There are many examples of this. Seven cars with ferroconcrete for the repair and construction administration stood idle at Tyazhin Station for 12 days in October. At Yashkin 5 cars with agricultural equipment and bricks delivered to the "Yashkinskiy" Sovkhoz were held up for 2 weeks. At the Kemerovo Classification Yard 3 cars with pipes were not unloaded for 16 days. The "Vodokanaltrest" would have been responsible for them standing there even longer had not people's control officers intervened.

All this leads to big losses of rolling stock which is in short supply. Since the start of the year they have exceeded 25,000 cars at the Kuznetsk

Metallurgical Combine, approximately 11,000 cars at the Zapsik and 32,000 cars at coal industry enterprises. Chemical industry enterprises are also organizing the unloading badly. More than 123,000 cars have been lost on the sidings of the line as a whole since the start of the year.

We established that all this was a consequence of disproportions in the development of the basic production and transportation of the enterprises. The question of electrification of a third main track on the open line of the Novokuznetsk-Vostochnyy-Zavodskaya Classification Yard has been on the agenda for many years now at the Kuznetsk Metallurgical Plant, for example. Nor are a car dumper and enclosure being built at the Mundybashskaya Sinter Factory. Enclosures are only being installed slowly at the Kuznetsk TETs, and work has not even been started here on the introduction of a car dumper. Some 150 loading complexes are in operation at the coal enterprises. But at only 5 of them is productivity over 600 tons per hour. It is not surprising that up to 23,000 units of rolling stock are lost annually on the mine and open pit tracks. Yet the USSR Ministry of Coal Industry was entrusted 6 years ago with creating complexes in the Kuzbass for treating and loading fuel of a capacity of up to 4,000 tons per hour.

Unfortunately, a potential such as increasing the static load is not being utilized in an efficient manner on siding tracks. As a result of 20,000 weighings performed by patrol members it was established that each car was underloaded by 2.5 tons on average. And at the mines of the "Yuzhkuzbasugol'" Association 60 percent of the rolling stock was underloaded by 3.5 tons. The intervention of the people's control officers helped remove these shortcomings.

The practical collaboration of the railroad workers and siding workers has a big impact if it is based on clear-cut, unified techniques. Unfortunately, this is far from the case everywhere: the techniques adoped by the allied workers are frequently ignored. The railroad workers do not always provide clients with timely information concerning approaching freight and the supply of empty cars, and they prepare the cars for loading in an unsatisfactory manner. And the organization of the unloading and cleaning of the cars on sidings leaves much to be desired. Arguments about who should carry out small-scale repairs of cars at junctions are frequent.

Nor is the best use being made of the potential at the freight stations. In Afonin, Baykaim, Belov and Leninsk-Kuznetsk, for example, the time taken to convey the cars to siding tracks is more than 2-3 hours, and the idling between the completion of loading operations and dispatch is 9.8 hours. At many stages the unloading is undertaken in only one shift, and hundreds of cars stand idle until morning. Of the line's 17 container areas, 14 also operate in just one shift. As a check showed, holdups because of defective mechanisms or a shortage of people are frequent at some of them. For these and a number of other reasons the oblast Motor Transport Administration failed to fulfill the plan for the centralized haulage of freight from the stations.

There is also much potential in reducing so-called repeat shipments. It is primarily a question of runs to the Kuzbass's enriching factories. More than 600,000 tons of coal were brought here in excess of the plan in the 9 months. And all this at a time when gondola cars were in short supply, and there was an acute lack of capacity.

Nor is efficient use being made of levers such as increasing traffic speed. Sectional speed, for example, is 0.1 kilometers per hour lower than the target, and technical speed is 8.3 kilometers an hour lower. The trouble lies in the erratic fulfillment of the freight-train traffic schedule: numerous holdups of the trains at stop signals, extraplan warning signals and admissions in accordance with invitation signals and so forth are reflected here.

Many loading resources are lost because of the holdover of cars awaiting repairs on the car-barn tracks of Prokop'yevsk, Tomsk, Belov and Tayga. Idling for running repairs is overdone by 10.7 hours and for car-barn repairs by 8.1 hours.

The Kemerovskaya Line's successful operation largely depends on the rhythmic nature of its supply with empty cars. Alas, currently up to 35 percent of the cars arrive in the first half of the accounting days. In the second half, on the other hand, an enormous number of cars must be assimilated beyond the time limit. A proposal was once submitted on the elaboration of supply-line measures to insure the equal provision of the coal-loading stations with empty cars. There was an idea, for example, concerning the allocation for the empty cars of fixed "threads" in the traffic schedule. But the ministry failed to react to these proposals.

Additional measures have now been formulated on the Kemerovskaya Line to speed up the unloading. Strict supervision has been mounted over the fulfillment of upgraded quotas for conveying car traffic volumes and delivering local freight. A firm procedure has also been established for the priority dispatch of empty gondola cars for loading with fuel. In a word, the course has been set toward insuring the continuous operation of the coal conveyor line.

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HIGH-SPEED EXPRESS TRAIN COMPLETES MAIDEN RUN

Moscow MOSKOVSKAYA PRAVDA in Russian 17 Nov 79 p 3

[Article: "The Express Picks up Speed"]

> [Text] Friday, 16 November. An unusual train arrived in Moscow from Leningrad. The "ER-200" express had completed its maiden run from the platform of Leningrad station.

Such was the name given to the electric train built at the Riga railroad car construction plant especially for the Moscow-Leningrad main line. It can reach a winged speed of 200 km per hour.

The light-blue express stopped at the platform of the Moscow station. One was struck by its unique streamlined shape with its engineer's compartment set back like that on a jet airliner. The drawn-out electric engine, seven meters longer than an ordinary engine, and the stretched cars of the train create the impression of ease and swiftness. Incidentally, if one turns to the exact calculations, it is found out that the weight of each car has been reduced by 4.5 tons. The first domestically produced "ER-200" bodies in practice are made from aluminum alloy.

Over the course of several years the Oktyabr' Mainline was a rapid transit testing ground for scientists, designers and railroad workers. The complex reconstruction of this line was carried out based on the research and recommendations of many scientific and design collectives of the Ministry of Railways. Curved sections of tight radius were straightened, automobile trestles were erected over the tracks and new switches were installed. The problem of successfully conducting the testing of the "ER-200" on this railroad was made easier by the fact that a so-called "velvet" track, without joints, had been laid.

As late as the middle of the last century a train took approximately 24 hours to run from Leningrad to Moscow. At that time it "tore along" with a speed of 25 km per hour. Today the "Aurora" and the "Red Arrow" cover these same 650 km in six hours. Now their fellow "ER-200," fastest for the time being, has completed its maiden passenger run. Just what is the "ER-200" like? It gives up nothing to the world's finest examples in terms of comforts and conveniences. The cars are air-conditioned and have soft, wide seats which can be turned in the train's direction of motion. There are, of course, many design features of this whirlwind train which are hidden from the eyes of the passengers. A smooth ride is insured by pneumatic shock-absorbers, and the car bodies are covered with an anti-noise mastic to reduce vibration. Owing to an increase in the power of the engine, maximum speed is attained in less than five minutes. The new train is simple to run because provisions have been made for many automatic devices. The speeds are high and the engineer must be extremely attentive. Robot devices help the engineer in this. One is responsible for smooth acceleration, another will indicate whether the track is clear and a third will advise the best speed at which to run the train on this section or that. There also exists an automatic traffic control system. The engineer assigns a program and an automatic device assumes control. If emergency braking becomes necessary, the train comes to a stop much quicker than is usual. The secret lies in the fact that the "ER-200's" brakes are not electropneumatic but electric.

The "ER-200" is the first "swallow" to complete the trip. With the emergence of such trains on the steel trunk of the Oktyabr' line one could say that the speed on this steel track has almost doubled in the last 20 years. In the long term similar speeds will also be attained on our country's other lines.

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RAILROAD

RAILROAD DEPOT WORKERS PREPARE FOR WINTER

Moscow GUDOK in Russian 31 Aug 79 p 1

[Article: "Prepare for Winter, Comrade Yardman"]

[Text] Last year's severe winter created serious complications at work for the Kazan yardmen. Therefore, hardly had the warm days arrived here when the yardmen, not putting things off, began painstakingly preparing for next winter. First of all, they thoroughly analyzed everything, even the tiniest flaws and deficiencies that had appeared during the cold period. On the basis of such an analysis and guided as well by the requirements of the ministry's and the line-chief's orders, they put together a program of measures which gave a concrete indication of those people who are to perform these measures and the time periods involved. This plan is being rigorously carried out. The control over its realization was assumed by executive managers and party and trade union organizations.

The necessary transition reserve of parts and assemblies, first and foremost those which most often break down in the cold, has already been created at the depots and PTO's (technical servicing points). Thorough instructions have been established for the people, especially for those who will be working at the onset of winter. Work has been carried out on the repair and winterizing of the buildings. The passenger car rolling stock which will not undergo scheduled repair work at the depots or plants when the cold weather sets in will have to be put in order through the yardmen's own efforts.

The Kazan yardmen's collective turned to its colleagues from other depots with an appeal to broadly expand the competition for modern, qualitative winter preparations, since the success of the entire transportation operation will depend upon the quality of preparation of the rolling stock and the repair base for work in snow and freezing weather.

This is well understood in the overwhelming majority of collectives at depots, technical servicing points and freight-preparation points. There, as in Kazan, the creation of an indiminishable reserve of materials, fuel, lubricants and spare parts is being completed. Since the beginning of the year more than 30,000 gondola cars have been modernized. The wooden planking has been replaced with metal sheathing, the frames have been reinforced and the end-doors have been sealed off. In addition, the frames have been reinforced and the lever motion improved on several thousand boxcars. Such rolling stock will serve more reliably in low temperatures.

Great attention must be given to strengthening the repair base. The experience of past winters testifies to the fact that the least damage was sustained by those lines where planned and routine sanitization of rolling stock has been staged on industrial rails. This practice of the Belovo-Kemerovo lines's depot collective, which has introduced complex mechanization in its shops, merits broad application. It makes it possible to increase the output of overhauled cars by a factor of 1.5 to 2 and to decrease their down-time by 20 to 30 percent. The broad application of a complex of progressive methods of processing the trains might be a great help to the collectives of the technical servicing points during wintertime operations. These methods have been established at technical servicing points on the Vladimir-Gorky and Perm-Sverdlovsk lines, as well as on a number of others.

In a word, the yardmen are conducting a large-scale operation. However, there are no grounds for smugness and self-complacency. An analysis of the lessons learned in past winters shows that far from all conclusions have been drawn from them. For example, the poor heating in the cars caused a great many critical comments from the passengers, while certain of the cars went out of service entirely as a result of frozen heating systems. The greatest number of such cases were on the Oktyabr' and Gorky lines. Meanwhile, although only the first month of autumn has arrived, a sufficient supply of coal has not been established on many lines, including those just mentioned. The supply that has been brought in, too, is frequently of low quality. At many of the technical stations, even on the Moscow junction, as well as in Perm, Adler, Irkutsk, Kemerovo, Volgograd and elsewhere there is a lack of transportation facilities, while here and there automobiles and tractors are enlisted for transporting fuel. It is necessary that such a situation be corrected without delay: the cars will have to be heated, you see, as early as September on certain main lines.

Capital investments ear-marked for the reconstruction of railcar enterprises on the Lvov, Azerbaijan, Western Siberia, Western Kazakhstan and a number of other lines are slowly being appropriated. The introduction of electric heating in the rolling stock is also "squeaking along." Even in those places where the cars are outfitted with the corresponding equipment, the equipment quite often does not work. This already shows a lack of administrative abilities on the part of the commanders in those areas and cannot be justified here with objective reasons.

One of the weakest areas in the freight hauling rolling stock, as is well known, is the journal-box assemblies with the sleeve bearings. A situation in which in the first six months of this year the number of damaged axle journals increased in comparison with last year cannot but cause alarm. The reasons for this do not lie only in the low quality of repair and inspection of the journal boxes but also in the lack of spare parts. By 1 September it was necessary to create an indiminishable monthly reserve of journal-box parts and lining material on all the lines. However, the material-technical supply agencies are lagging in the delivery to the line of journal-box packing brushes and journal-box packing assemblies with brushes.

In accordance with the example of the Moscow line, competition for running trains of increased weight and length is spreading throughout the network. In order that this competition maintain its pace during the winter period, it is necessary that we everywhere put into practice a system of measures for strengthening and modernizing the the automatic braking equipment. The collectives of many progressive automatic brake check points (AKP's) have taken on the commitment to put aside into a winter reserve an additional number of pieces of apparatus and other brake equipment parts that are in good repair.

As always, the success of cold-weather operations will be decided by the people. The yardmen, particularly at the technical servicing points and freight-preparation points, work under the most severe conditions. The most important task of the commanders and trade union organizations is to mitigate these conditions as much as possible and to do everything necessary to insure highly productive labor.

Comrade People's Inspectors, "Komsomol Prozhektoristy," public traffic safety inspectors! Come out onto the roads by your enterprises, organize inspection posts at the "hot" spots. Has everything been done so that the inter-line routes in the station yards are in order, so that there is a sufficient number of spare parts on the shelves and so that the routes into the long winter nights are well lit? Has the delivery of hot food to the work areas been arranged, in particular, at the technical servicing points far from the main depots? Have the accomodations everywhere been properly equipped with heat for the people?

Such work is particularly important on the Krasnoyarsk, East Siberia, Tselinnaya and Trans-Baikal lines, which are some of the first to enter winter and where things are very difficult right from the preparation of the cars.

Comrade railcar service managers and depot managers on the Oktyabr', Baltic, Odessa, Gorky, West Kazakhstan, Sverdlovsk, Kuybyshev and Far Eastern Lines! Take the most urgent measures to fully man the railcar inspector staff. Do not let undermanned shifts work out in the cold. This will, you know, have an unavoidable effect on the quality of preparation of the trains.

The yardmen have many times passed their winter examination with honors and have shown themselves to be true warriors on the leading edge of the battle to guarantee transportation. Let this present examination which winter will inflict on us also be successful!

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RAILROAD

FROZEN FREIGHT ON SOVIET RAILROADS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Jan 80 p 2

[Article by M. Lepnev, candidate of technical sciences, senior scientific associate of the division for the comprehensive mechanization of loading and unloading operations of the All-Union Planning and Scientific Research Institute for Industrial Transportation: "In Hopes for a Warm Winter: Why Trains With Coal and Ore Are Standing in Line Waiting for a Warming Up"]

[Text] Not long ago I talked with the director of a metallurgical plant. We mentioned the past harsh winter. And the director expressed the strong conviction that such frosts will not repeat themselves for a long time now.

"There must not be such cold weather again," he said. "We cannot endure such strain a second time."

In this declaration, which contains more emotion than logic, there is concealed, perhaps, the essence of the problem--many are hoping not for a technology capable of withstanding frosts, but for a warm winter.

However, even a warm winter is not without frosts. And we have grown so accustomed to winter, have so resigned ourselves to expenses for it, that in some industries we do not even keep "winter" specialists. Expenditures for frost, too, we do not always consider. For this reason, apparently, there is a delay in transportation in the introduction of progressive machines and technologies for the unloading of frozen cargo.

First of all, we must define the terminology more precisely. There is "transportation of bulk freight." But in winter the majority of this is no longer free-flowing. To empty it, it sometimes must be blown apart with dynamite. This is why one has to speak more often of "frozen," not "bulk" or "free-flowing" freight.

Judge for yourself. More than 60 percent of the territory of our country is located in climatic zones with a cold period in excess of 6 months. Up to 47 percent is in the permafrost zone, where even the average temperatures have a negative value.

The volume of transport of frozen bulk freight during the cold period reaches 1.4 billion tons. Additional cash expenditures for unloading on the main railway transportation line alone exceed 250 million rubles a year. And labor expenditures amount to over 430 million man-hours. This is equivalent to the diversion of 500,000 to 600,000 people from basic production during the year's cold period.

As we see, the losses of material, financial and labor resources are considerable, and they are constantly growing. Is it possible to put a stop to the invasion of winter expenditures? Yes, if measures are taken.

Let us take as an example the transportation and unloading of ore and coal for enterprises in metallurgy--an industry in which the state of affairs is in rather good shape.

In the USSR Ministry of Ferrous Metallurgy there are approximately 80 convective garages. That is, bluntly speaking, an overall enclosure where more than 2000 railroad cars can be defrosted simultaneously. Is this a great deal or a little? And the main thing, is this method a good one?

To defrost ore, more than 24 hours are need; for coal even more. During the heavy frosts in January 1979, long lines of railway cars formed on the approaches to the enclosures. The ore in them froze even more. Two to three 24-hour periods were already required to unload it. Now, I think, the exclamation of the director is understandable: "We can not endure such a strain."

But is, then, the line at the enclosures endless? It goes without saying, that this is not a fatal inevitability. Already in April 1973 the USSR Ministry of Ferrous Metallurgy and the USSR State Committee for Construction put into operation the leading model of an installation with gas and infrared radiators (GII) for the warming up of ores and their concentrates.

In comparison with the overall enclosures, the GII defrost ore in 5-6 hours and their coefficient of useful operation (kpd) is 27-30 percent; i.e., 2-3 times higher than in the convective garages.

It would seem that people would embrace such a novelty with both arms. Alas, the workers in the USSR Ministry of Ferrous Metallurgy did not bring the GII installations to the point of wide introduction. Why? The reason is always the same: the Ministry does not have the kinds of specialists who would seriously occupy themselves with an analysis of work during winter.

Another example. At the heat and electric power plant of the USSR Ministry of Power and Electrification wide application is being made of "intermediate warming." Its essence: to warm up the coal so that it comes off the sides of the railroad car. Then it will roll out and break up. For this purpose the power engineers equipped their enterprises with unloading complexes. The metallurgists were not interested in the complexes of others.

And still another, most characteristic example.

In 1975 scientists created "niorgin"--a chemical means to protect bulk freight from freezing to the walls of railroad cars and the baskets of machines. The effectiveness of "niorgin" is as follows: if the railroad car or basket is not covered with it, the cleaning will come to 15 kopecks per ton of freight. Why? The same USSR Ministry of Ferrous Metallurgy and other ministries declare that there is no need for "niorgin." It seems that it is not needed at all.

I think the examples suffice. I will only say that things are not any better in regard to the introduction of other methods that have been developed and tested in various departments. And the reason is always the same--hope for a warm winter and a habit which lives on because of ignorance. It is done, they say, because it cannot be otherwise; they have done it that way from birth. This ignorance is not accidental. It has a basis: the coal miners take the view that one has to know how to mine coal; the metallurgists--that one has to know how to found steel. But nobody wants to give serious thought to transportation. Meanwhile it is in production that kopecks must be invested in order to receive rubles in transportation.

For example, coal from the Kuznetsk coal fields, according to the norms, has a moisture content of 7 percent. If it is brought down to 5-6 percent, the dryness of the coal is preserved. To do this, as has been shown, is not difficult. But they did not lower the moisture content because of the existence of an All-Union State Standard (GOST) in which simply no one was responsible for knowing about the significance of this indicator. Meanwhile the USSR Ministry of Coal Industry accounts for 35-40 percent of all frozen freight. In order for it to become free-flowing in the winter, the norm of its moisture content must be lowered first of all, secondly the percentage of trash must be reduced, and third, physical and chemical means must be utilized. But to do this, I underscore, requires first of all a change in the attitude toward bulk freight, which 6 months out of the year is not free-flowing.

At the November (1979) Plenum of the CPSU Central Committee, Comrade L.I. Brezhnev said that it is necessary to put together a program which must encompass questions of the development of transportation. It must necessarily be aimed at the mechanization of loading and unloading operations. "The preparation of such a program," said L.I. Brezhnev, "and the daily efficient administration of the work of all types of transportation requires that the responsibility of the transportation ministries and of USSR Gosplan be decisively strengthened."

It goes without saying that the transportation and unloading of frozen freights is only a part of the problem which was discussed at the Plenum, but a rather significant part. And to brush it aside is impossible.

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RAILROAD

USE OF COMPUTERS AT CLASSIFICATION YARDS

Moscow GUDOK in Russian 22 Nov 79 p 2

[Article by N. Simonovich, GUDOK correspondent, and G. Gsyupa, RABOCHEYE SLOVO correspondent: "Computers Control Rail Car Handling"]

[Text] The practice of some classification yards of the system convincingly demonstrates that the use of computers for control and operational accounting of the work of "train factories" under present conditions has tremendous operational potential. An interest in the experience of the first 14 classifications yards which use computers is understandable. Evidence of this is the network school on the use of electronics for automation of classification yard operation held at Darnitsa Station.

The participants of the school heard approximately 30 reports. A clear pattern of the situation was compiled from the talks of representatives of the Main Administration for Computer Technology and workers of Darnitsa, Perm'-Classification, Yaroslav'-Main, Kochetovka, Gor'kiy-classification and other stations. The experience of the Darnitsa Station collective evoked special interest. They began to introduce electronics here in 1975. The achievements of the Leningrad-Classification-Moscow and Orekhovo-Zuyevo stations were used during the first stage.

Computer technology took on itself step by step ever newer and newer functions. The ASU [Automated control system] now issues annotated waybills for disassembling consists, storage reports, instructions for PTO [technical inspection] workers for disconnecting hoses and engineer lists for filling unit trains and provides information for completing consits of trains in the classification yard.

A department of the railroad computer center has been created at the station and is staffed by experienced specialists. Electronic technicians, mathematicians-programmers and technicians were trained in courses of MPS [Ministry of Railways], at MIIT [Moscow Institute of Railroad Transportation Engineers] and at the Videoton Company in Budapest.

The chief of Darnitsa Station L. Petrenko, the chief of the railroad computer center M. Nikulin and engineer S. Murzin told the school participants how time is saved in the classification yard during handling of cars and how the nature of the labor of the classification dispatchers, hump-yard duty officers, operators and technical inspection workers changed in a fundamental manner.

There was much interesting and instructive in the speeches of other station workers where computers also operate. Attention was also devoted to analysis of deficiencies and problems of further development of ASU. One of the main types of interference, as those assembled noted, is the low quality of information coming from adjacent stations and railroads. There are too many delays in transmission of this information, distortions and incomplete data.

In the recommendations adopted, the school participants noted the expensive program of actions for further development of ASU. It is primarily necessary to develop as rapidly as possible the communications system and to provide a stable energy supply to the computers. The time has come to think about organizing the interaction of classification yards by using computers in purposeful directions. This will permit significant improvement in the forming-up plan and an increase in the transient nature of traffic flows. The time has also come for accelerating introduction of a standardized rolling stock numbering system with protective symbol: to create unified information organizations on these railroads and to develop the status of subdivisions using ASU's at classification yards.

Many problems must be solved by the planning and design bureau, scientific research organizations and the Main Administration of Computer Technology. The time has come to change from experimentation and initial steps to extensive introduction of ASU not only at classification yards, but on entire lines.

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RAILROAD

MECHANIZATION OF TRACK-LAYING WORK URGED

Moscow EKONOMICHESKAYA GAZETA in Russian No 50, Dec 79 p 17

[Article by B. Tsvelodub, department head of the All-Union Scientific Research Institute of Transport Construction, and A. Sessarevskiy, laboratory head: "Reserves for Mechanization"]

[Text] The transport builders annually lay approximately 4,000 kilometers of track Completion of a large volume of work requires efficient machines and equipment. The Ministry of Heavy and Transport Machine Building is responsible for manufacture of them. Unfortunately, it does not always cope with the mission entrusted to it.

For example, electric ballast layers are urgently needed by the builders to raise the rail-tie network. However, Mintyazhmash does not produce these machines. VPO-3000 straightening-packing-finishing machines can raise the track to a height of only 120 millimeters. This is totally inadequate in construction of railroads when the rail-sleeper section must be raised by not more than 250 millimeters.

Study of the VPO-3000 design at the All-Union Scientific Research Institute of Transport Construction showed that slight changes in this machine can provide the necessary track-raising height. This would permit making straightening-packing-finishing machines as hoisting machines as well, which would sharply improve their use and would make it possible to do without electric ballast machines. However, the request of Mintransstroy [Ministry of Transport Construction] that this work be carried out by Mintyazhmash is not being implemented. Mintransstroy was forced to manufacture electric ballast machines at machine repair plants not adapted for these purposes to avoid the use of heavy manual labor in track-lifting operations.

Work on shaping the sand cushion and crushed stone layer of the track roadbed also remains a bottleneck. The expenditures of manual labor reach 175 man-days per kilometer of track. The VNII [All-Union Scientific Research Institute] of Transport Construction worked out the technical mission as early as 1973 to develop a machine for the given operations.

Mintyazhmash manufactured and tested an experimental model in 1979 which indicated satisfactory results. However, the problem of serial manufacture has not been solved. Incidentally, the annual national economic effect due to production and use of only one of these machines should comprise 143,000 rubles according to calculations of Mintyazhmash itself.

The scales of railroad construction are increasing constantly in the regions of Siberia and the Far East under severe climatic conditions, where it is especially important to raise the productivity of each worker. The transport builders are awaiting solution of this problem--mechanization of track operations and provision of railroad construction projects with new, highly efficient machines--from Mintyazhmash.

6521
CSO: 1823

RAILROAD

BAM BUILDERS CONSTRUCT BRIDGE ACROSS NYUKZHA RIVER

Moscow SOVETSKAYA ROSSIYA in Russian 21 Sep 79 p 1

[Article by V. Sergeyev: "A Bridge Across the Nyukzha"]

[Text] The BAM [Baikal-Amur Mainline Railroad] builders have overcome yet another large water barrier. Installation of the metal girders of the bridge across the Nyukzha River has been completed.

There is as yet no roadbed here on the 1,461-kilometer central section of the mainline. Only a wide crosscut breaks off near the steep bank. The bridge builders of the 10th Construction Detachment were the very first to arrive here in the winter of last year. A settlement arose in the thick taiga. Roads were laid for heavy equipment. And then the traditional poster--"We Will Conquer the Nyukzha!"--appeared on one of the huts.

And later the builders celebrated the birth of the first reinforced concrete support like a holiday. Three spans more than 100 meters each have now reliably connected the bridge structures. The leaders of the socialist competition--the komsomol-youth brigades of Petr Kolosov and Vasiliy Molotov--have earned the honorary right to complete assembly of the last girder components.

Thus, a bridge more than 400 meters long across the Nyukzha River is under construction. The track layers will soon arrive here.

6521
CSO: 1823

RAILROAD

BAM TUNNELING WORK PROGRESSES NEAR LAKE BAYKAL

Moscow IZVESTIYA in Russian 20 Oct 79 p 1

[Article by A. Kleva, special IZVESTIYA correspondent: "Tunnels Above the Lake"]

[Text] The bridges have been erected and laying the roadbed on the difficult profile of the 50-kilometer descent from Davan Pass has been completed. The further route of the railroad--to Nizhneangarsk--lies along the rocky shore, which breaks sharply near the waters of the lake.

It was decided to drive four two-track tunnels along the section subject to landslides and storms to ensure reliable and safe traffic of trains. The 16th detachment was entrusted with completing the task. It has extensive experience in construction under similar complex conditions and drove the mountain tunnel through Stanovyy Khrebet ahead of schedule, through which trains with Yakutsk coal are already rushing.

The collective redeployed to the new site in an operational manner and already has to its account approximately 200 meters of the second tunnel--and the face area of the second is 120 square meters. Fifty meters monthly are supposed to be driven according to the schedule. But the sections of V. Shil'nikov and I. Khitrikov exceeded the indicator by 10 meters and the teams of A. Bychkov and V. Dubrovskiy are lagging only a little behind them. "Driving 60 meters per month will soon become the general norm," the builders state.

Things are also going successfully in the first tunnel. The collective decided to drive two sections of 1.5 kilometers ahead of schedule for the year. And the explosive specialists and machine operators rather than the miners have already arrived at the third section. Calculations showed that this almost 400-meter section will be driven more rapidly and less expensively by the open method. Operating clearly and smoothly, the brigades of the 88th special administration and the 160th mechanized column are already completing one of the largest cliff excavations on the mainline, having cut out part of the inaccessible mountain. The complex Komsomol-youth brigade of G. Nekrasov will soon turn over the wayside for installation.

Thus the route farther to the east is being opened up. The battle with the cliffs will be waged in the tunnels and rails will be laid on the coastal bypass route. The finish is also near here. The mainline will arrive at Nizhneangarsk--the Buryat support base of BAM [Baikal-Amur Mainline Railroad]--this year.

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RAILROAD

BRIEFS

BL-11 ELECTRIC LOCOMOTIVE--The electric locomotive builders at Tbilisi are producing locomotives of the VL-11 series. This is a powerful multisection locomotive. It has been presented for certification with the badge of quality. The plant innovators are making an important contribution to improvement of production and product quality. Introduction of their inventions and innovator proposals since the beginning of the five-year plan has permitted the enterprise to save 2,140 rubles. [Text] [Moscow PRAVDA in Russian 12 Aug 79 p 1] 6521

CSO: 1823

OCEAN AND RIVER

MARITIME TRANSPORT PLAN FULFILLMENT FOR 1979 REPORTED

Moscow VODNYY TRANSPORT in Russian 12 Jan 80 p 1

[Article: "Maintain the Rates Which Have Been Achieved"]

[Text] Another year of strenuous labor by the Soviet people to carry out the historic decisions of the 25th CPSU Congress has gone into history. The November (1979) Plenum of the CC CPSU, the speech at it by Comrade L. I. Brezhnev, and the second session of the USSR Supreme Soviet, 10th Convocation, were important landmarks on the road to the construction of communism in our country. Along with the entire Soviet people, important successes were achieved in 1979 by the workers of the Order of Lenin Maritime Fleet. The annual shipment plan in domestic trade was fulfilled by 104.4 percent, and in foreign trade by 103.9 percent.

Very important assignments for the delivery of cargoes to points in the Arctic have been fulfilled, and the amounts of shipments to Sakhalin, Kamchatka, and Magadan have increased. The maritime ferries on the Caspian, Skahlin, and the Black Sea operated efficiently. Shipments to Vietnam, Cambodia, and Cuba were under especial control. The seamen of practically all of our steamship companies achieved a great deal last year to ensure our country's foreign trade freight shipments to dozens of developing countries in Asia, Africa and Latin America and to many industrially developed states.

The plan for the last, fourth quarter was fulfilled by 108.3 percent for domestic trade and by 101.2 percent for foreign trade.

Throughout all of the year the most stable and even work was done by the initiator of the All-Union Socialist Competition -- the collective of the Baltic Steamship Company. Successful work was done in fulfilling their shipment plans by the collectives of the Latvian and Novorossiysk steamship companies which substantially overfulfilled the socialist commitments adopted by them for 1979. The Soviet Danube Steamship Company did stable work. The barge system gave a good account of itself.

Large workloads were characteristic last year of our maritime ports which operated under a great strain. The plan for loading and unloading work was performed in the ministry as a whole by 104.5 percent, including 106.7 percent in the "Sevzpflot" port, 104.2 percent in the "Yuzhflot" port, and 102.8 percent in the "Dal'flot."

Last year the work experience of our Leningrad transportation workers which received high praise from the CPSU Central Committee became even more widespread. The continuous planning of the work of transportation junctions is in operation in practically all of our maritime ports. Unfortunately, idle time by ships and railroad cars in a number of ports is nevertheless being reduced extremely slowly. In the ports of the South and the Baltic and Far East a large number of very important cargoes are piling up while waiting for railroad cars. Ship schedules are being violated.

New and increased tasks have been set for the country's maritime fleet for 1980. Shipments to the remote regions of the country have to increase, including during the limited navigation period. A large amount of petroleum shipments will have to be carried out in the Caspian, Black Sea, and Far Eastern waters. Faithful to their international duty, since the first days of 1980 the seamen of the Black Sea, Far East, Primorskiy, Novorossiysk, and a number of other steamship companies have been ensuring the delivery of cargoes to the ports of Vietnam and Cambodia.

Large shipments of export and import cargoes have to be performed this year on all maritime waters. And again, as was the case last year, our ports will be working with large workloads. It is to this sector that especial attention has to be devoted. It is important to increase the efficiency of the use of port machinery, to staff ports with workers, and to improve the work of enlarged overall teams.

Following the initiators of the socialist competition all of the collectives of our maritime transport have adopted increased commitments to fulfill and overfulfill the plans for 1980 and for the 10th Five-Year Plan as a whole. There is no doubt that the collective of many thousands of workers in our maritime transport, having taken a labor watch in honor of the 110th anniversary of the birth of V. I. Lenin, will do everything necessary to make a worthy contribution to the realization of the 25th CPSU Congress.

[Table on following page]

Fulfillment of the 1979 Plan for Shipment in Domestic and Foreign Trade (in percent)

Steamship Companies and GKHO	Domestic Shipments	Foreign Shipments
North	101.1	100.4
Murmansk	100.5	100.7
Baltic	--	106.3
Estonian	106.6	101.1
Latvian	116.9	100.5
Lithuanian	--	102.1
Total GKHO "Sevzapflot"	104.1	103.6
Danube	104.7	103.6
Azov	103.9	100.8
Black Sea	--	100.7
Novorossiysk	109.4	111.9
Georgian	104.7	102.7
Caspian	102.3	113.7
Total GKHO "Yuzhflot"	103.8	104.6
Far East	104.0	100.3
Kamchatka	101.1	109.8
Sakhalin	101.6	101.8
Primorskiy	102.6	117.8
Total GKHO "Dal'flot"	102.3	101.8

The Central Asian Steamship Company fulfilled its annual shipment plan in tons by 106.7 percent and by 103.6 percent for ton-miles.

2959
CSO: 1823

BRIEFS

NAKHODKA SHIP BUILDING--Organization of a new ship-building shop has begun at the Nakhodka ship-repair plant. Its establishment will satisfy increased production volume and greater variety of work at the plant and will facilitate fuller specialization and more progressive labor organization. The plant will begin production of the new "turist" type coastal passenger ships soon. [Vladivostok Domestic Service in Russian 0930 GMT 8 Feb 80]

CSO: 1829

MISCELLANEOUS

UDC 622.692.6:629.114.4

IMPROVING ORGANIZATION OF CARGO SHIPMENTS

Moscow NEFTYANOYE KHOZYAYSTVO in Russian No 11, Nov 79 pp 3-7

[Article by M. N. Syagayev, Kuybyshevneft, G. I. Basharin, B. P. Markelov and S. Z. Farkhutdinov, Kuybyshev Department of the All-Union Scientific-Research Institute for Organizing the Administration and Economics of the Oil and Gas Industry: "Upgrading the Organization of Cargo Shipments--A Major Potential for Increasing the Effectiveness of Production"]

[Text] Dividing the material-technical support and transportation services into separate subdivisions within the industrial associations for petroleum extraction has created favorable prerequisites for a complete separation of basic production from the auxiliary functions of delivering material-technical resources to project sites. In addition, this has elevated the quality of the performance of the stated functions by the specialized subdivisions--industrial and technical maintenance based (ITMB) and acquisition services (AS) as well as the technical transport administrations by organizing the timely delivery of goods to points of immediate consumption and better utilization of the highway cargo transport system.

However, the functional practices of the industrial and technical maintenance bases (ITMB) and the acquisition (AS) services as well as the technical transport administrations (TTA) indicate that idle time exists among production sites as a result of the fail[illegible] deliver the necessary goods on time. The currently operating s[illegible] of dividing up the transport units at the disposal of a client doe[illegible]ning to improve utilization of the fleet or the cargo capacity of transport resources. This can be explained by the existing organization of centralized deliveries of material resources from the industrial and technical maintenance bases and acquisition services which, as users of transportation resources, are not interested in loading them for return trips and are not in any position to do so. There are considerable shortcomings in the planning of cargo shipments as well.

In order to determine the potential for increasing the effectiveness of transport equipment utilization and to develop measures to improve organization and optimize cargo shipments, Kuybyshevneft has made a study of the organization of shipments in cooperation with the Kuybyshev branch of the All-Union Scientific Research Institute for Organizing the Administration and Economics of the Oil and Gas Industry (VNIIOENG).

Cargo shipments to associations are made primarily by truck transport belonging to 8 technical transport administrations located in 6 regions (Figure 1) where operations are underway for the drilling of holes, petroleum extraction and capital construction. Based on fiscal data for 1977, 3,360,000 tons of cargo were shipped by the autotransport resources belonging to all the technical transport administrations. The total volumes of cargo shipments and the types of cargo truck operations at the piece rate are shown in Table 1.

Table 1

Types of Activity	Cargoes handled		Operating time		Average daily transport sharing	
	thousand tons	%	thousand tons	%	units	%
Subdivisions for oil and gas extraction	1,599.1	47.6	690.9	37.3	270.2	37.7
Enterprises for drilling test holes	656.6	19.6	430.6	23.3	163.6	22.9
Construction organizations	372.7	11.1	201.5	10.9	80.5	11.2
Bases for industrial-technical service and setting up	257.6	7.7	195.1	10.6	137.0	10.3
Other subdivisions	471.4	14.0	332.0	17.9	128.1	17.9

It is apparent from Table 1 that the most significant volumes of cargo shipments (47.6 percent) were handled for the 6 Oil and Gas Extraction Administrations (OGEA's) while centralized deliveries of goods organized by industrial and technical maintenance bases and acquisition services amounted to a total of 7.7 percent. Of this amount, 121,400 tons of cargo were delivered to drilling enterprises, 57,000 tons were shipped to extraction organizations and 24,400 tons went to construction organizations.

The distribution of cargo shipments to associations during 1977 for various types of activity is shown in Table 2 as a function of the attributes of regionalization, the forms of organization and the responsible executives. From this, it is evident that interregional transport accounts for 87.2 percent of the cargo shipments. This involves primarily the transport of goods handled by the technical transport administrations of a given region between project sites, shops, elements of the same subdivision, between the subdivisions of an association and enterprises of other sectors located within the petroleum region of a given association.

Table 2

Types of Activity	Volume of shipments by attributes of regionalization					Volume of shipments by forms of organization				
	total, thousands of tons	intra-regional		inter-regional		total, thousands of tons	on requisitions from subdivisions (contract method)		by transport equipment at disposal of subdivision	
		thousand tons	% of total volume	thousand tons			thousand tons	% of total volume	thousand tons	% of total volume
Subdivisions for extraction of oil and gas	1599.1	1550.7	97.0	48.4	3.0	1599.1	--	--	1599.1	100
Enterprises for drilling test holes	656.6	407.1	62.0	249.5	38.0	656.6	391.4	59.6	265.2	40.4
Construction organizations	372.7	325.4	83.7	47.3	12.7	372.7	--	--	372.7	100
Bases for industrial-technical maintenace and setting-up services	257.6	171.7	66.6	85.9	33.4	257.6	150	58.1	107.6	41.8
Other subdivisions	471.4	471.4	100	--	--	471.4	--	--	471.4	100

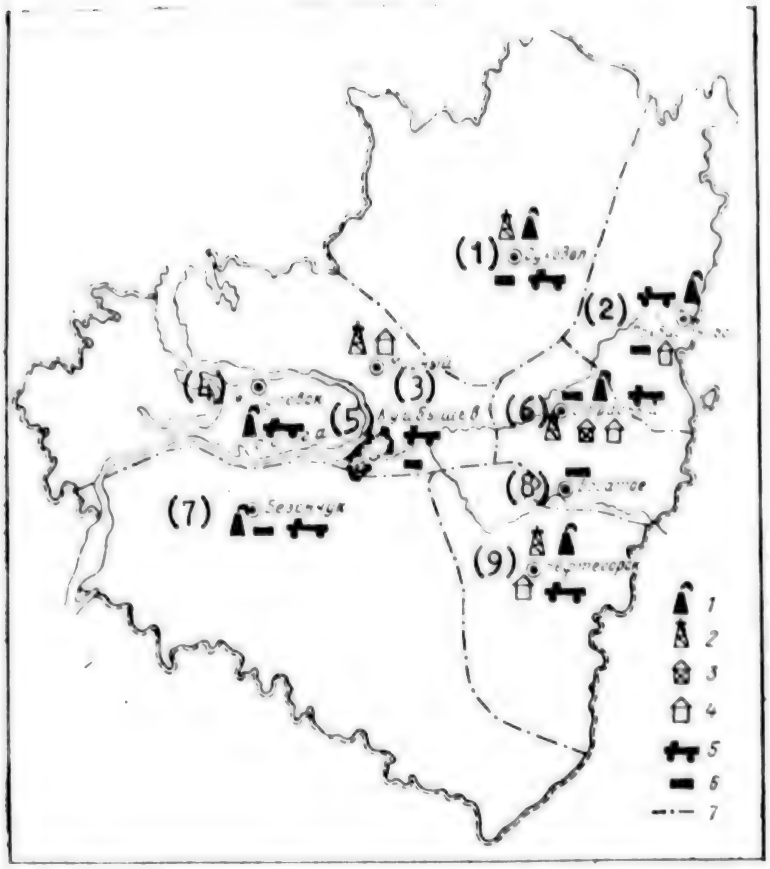


Figure 1. Location of primary subdivisions.

[Picture Key]
1. Oil and Gas Extraction Administration (OGEA)
2. Administration of Drilling Operations (ADO)
3. Construction-Maintenance Administrations
4. Construction-Assembly Administrations
5. Technical Transport Administration
6. Industrial-Technical Maintenance Bases and Acquisition Services
7. Oil regional boundaries

Key:
1. Skuhodol
2. Pokhvistnevo
3. Mirnyy
4. Zhigulevsk
5. Kuybyshev
6. Otradnyy
7. Bezenchuk
8. Bogatoye
9. Neftegorsk

Considerable volumes of interregional shipments in the drilling and construction industries result from these enterprises operating in other regions that are remote from their own primary bases of operation. These shipments are made by the technical transport administrations of a region via the point where the primary industrial base of a drilling enterprise or construction organization is located as well as by technical transport administrations in other regions. Interregional shipments from the bases for industrial and technical maintenance and acquisition services which account for 33.4 percent are the result of the particular specialization of the bases for processing various types of material resources as well as by the break in the delivery dates. This has a substantial effect on the organization of cargo shipments and their administration.

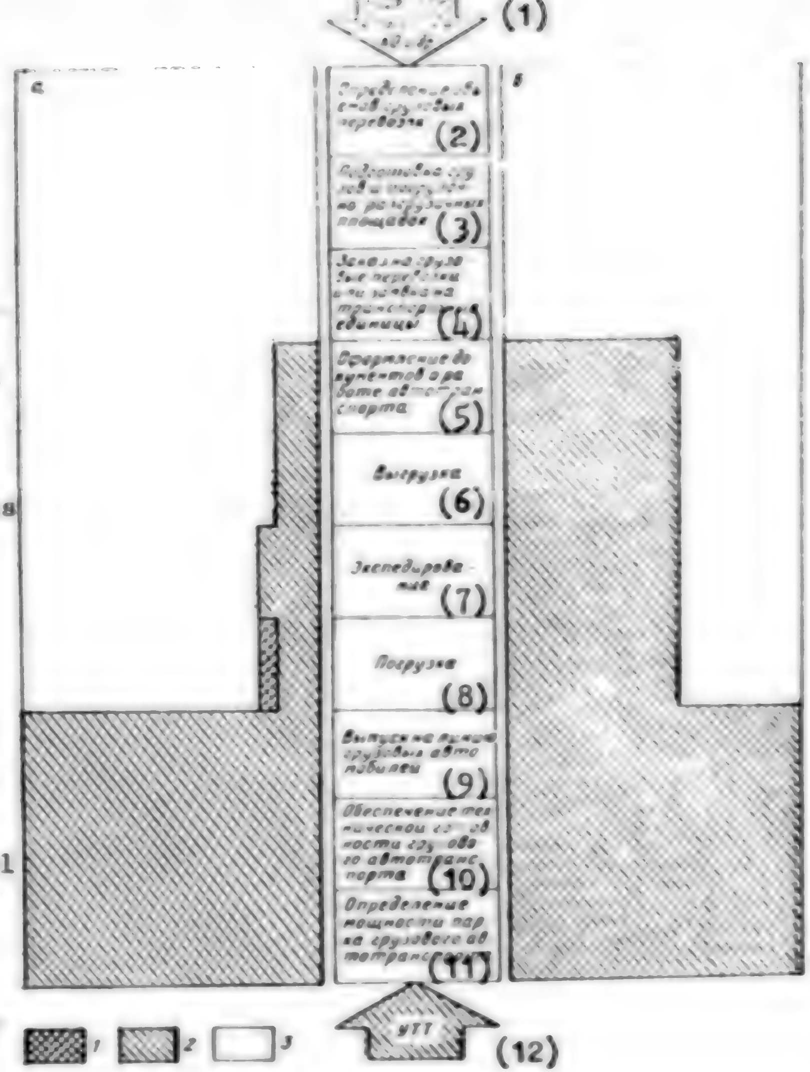
Cargo shipments based on orders from the subdivisions are handled by the technical transport administrations only for drilling enterprises, industrial and technical maintenance bases and the acquisitions organizations while the entire volume of cargoes for the extraction of oil and gas and the construction industry is shipped by the transportation resources at the disposal of the oil and gas extraction administrations and building organizations. It is these interregional shipments that significantly increase transport expenses for the subdivisions of the primary industry.

Analysis has shown that 88.3 percent of the cargo shipments is handled by highway transport shared by the technical transport administration on the basis of requisitions from the association's subdivisions at their disposal. Here, the mutual relationships, the magnitude of highway transport utilization and the responsibility of the parties involved are regulated by agreements that have been concluded. The primary task of organizing cargo shipments and the effective use of shared transport resources is handled by the clients--the auxiliary services and shops of the OGEA's, the Administration for Drilling Operations, the Construction-Assembly Administration and other of the association's subdivisions.

In some cases, when requesting autotransport, the shops and auxiliary services do not use it very efficiently, especially when the base industry does not demand full utilization of the cargo capacity of shared transport resources or full lading during the course of a workday. The effectiveness of using this custom-ordered transport is often reduced because of inopportune sharing or less than full compliance with the stated requirements for loading-offloading equipment.

In six of the association's administrations for technological transport, there are loading-offloading bureaus (LOB's) which fulfill orders from the subdivisions to ship cargoes. Here, the subdivisions' clients are concerned only with the preparation of cargo for delivery and receipt. The remaining functions of the shipping process are performed by the LOB's (the technical transport administration acts as a contractor).

The left-hand portion of Figure 2 shows the actual volumes of cargo shipments during 1977 (on the horizontal) and the distribution of functions by execution (on the vertical) among clients (Oil and Gas Extraction Administrations, Administrations for Drilling Operations, Construction-Assembly Administrations and the bases for industrial and technical maintenance and the setting-up services) and contractors (the Administrations for Technological Transport). From the illustration, it is evident that only a - current: 2,710,000 tons through efforts of association's subdivisions; 258,000 tons--centralized delivery through bases for industrial-technical maintenance and setting-up services to include 150,000 tons by contract method; 392,000 tons by contract method; 3,360,000 tons-total volume of cargo shipments



1-loading functions performed by industrial technical maintenance base and SS, 150,000 tons handled through LOB's
2-functions performed by technical transport administration
3-functions performed by association's subdivisions

Figure 2. Distribution of functions in the organization of cargo shipments.

b - recommended: 2,095,000 tons by contract method; 1,265,000 tons through efforts of association's subdivisions.

Key:
1. OGEA, ADO, CAA, industrial technical maintenance base, acquisitions and others
2. Determining volumes of cargo shipments
3. Preparation of cargoes and loading-offloading areas
4. Order for cargo shipment or application for transport units
5. Compilation of documents as to operation of highway transport
6. Off-loading
7. Forwarding
8. Loading
9. Departure of cargo vehicles for route
10. Technical readiness support of highway transport
11. Determining capacity of highway transport fleet
12. Technical transport administration

542,000 tons (150,000 tons for the BITM and setting-up services and 392,000 tons for the industrial subdivisions) or 16.1 percent of the cargoes were handled through LOB's, the most effective means. The use of loading-offloading bureaus makes it possible to free the association's subdivisions to the maximum extent, to ship the required goods by means of the same transport resources during the workday of various clients and to make efficient use of portable loading-offloading equipment (tractor cranes, truck cranes, autoloaders and the like).

This has also determined the direction of research and the search for ways to increase the effectiveness of using highway transport by expanding the volumes of cargo shipments by the contract method.

The right-hand side of Figure 2 shows a potential expansion in handling volumes under the conditions that exist within Kuybyshevneft of up to 2,095,000 tons annually or 62.5 percent of their total volume. The shipping volumes are not involved in the technological processes after delivery of the material resources to project sites from the total of all types of cargo shipments.

For this purpose, all cargo shipped by transport equipment was divided on the basis of a study of the original shipping documents into two groups: those not associated with the technology of conducting operations and those that are. The second group includes, for example, the involvement of a certain number of tank trucks which "drink" directly from the well; haul condensate from a facility for gas drying; deliver oil and acids for drilling to prevent jamming of the equipment; deliver tools, spare parts, equipment to prevent accidents, breakdowns, and the like.

Cargo shipments of this type, in our view, should be organized by the subdivisions of the basic industry of the association through a division of the required number of transport units based on the requests for them since, in this instance, only they can provide the most effective use of transportation equipment as a result of combining the shipping and technological processes.

On the basis of the techniques explained, volumes have been determined and the listing of cargo shipments subject to handling by the contract method has been enlarged:

--those from bases for industrial-technical maintenance and set-up services for subdivisions of the associations;

--heavy construction materials from local suppliers to projects under construction;

--those from the industrial service bases of the Oil and Gas Extraction Administration, Administration for Drilling Operations and the base facilities for construction organizations at project sites located within the other regions of an association that are not associated with technological processes (interregional shipments within an association, site-to-site shipments, intershop deliveries within the subdivisions of an association by highway transport not involved in the conduct of technological operations during the drilling of holes or the extraction of petroleum or internal shipments).

Upgrading the organization of cargo shipments and the administration of them within an association then consists of implementing centralized cargo handling by the contract technique through establishment of a central transport forwarding service (CTFS) under the association's technological transport administration and special technology (TTA and ST) at the branch base for the operations of the TTA and ST and the industrial-dispatch service for administering the industrial-technical maintenance base and acquisition service as well as a transport-forwarding service (TFS) in each technological transport administration. This provides for a much more efficient redistribution of functions to organize cargo shipments among the subdivisions and highway transport enterprises of an association.

In this instance, the industrial subdivisions of an association act as clients of cargo shipments while the technical transport administrations become the contractors (the managers of the shipping process). A client makes a requisition or places an order for a shipment of goods while the contractor completes the entire cycle of the shipping process--he takes the load to the point of dispatch, forwards and delivers it, then unloads it at the distination and surrenders it to the user in compliance with the shipping documents. The functions of the client are reduced to the initial ordering of volumes of cargo shipments by stock numbers and determining the points of loading and off-loading. The functions of preparing the cargo for shipment and maintaining loading-offloading yards are also reserved for the clients.

As a result of the large volumes and significant difference in the recommended form for organizing cargo shipments and administering them from that presently in effect, the practical implementation of these steps is foreseen to take place in stages (Table 3).

Stage I is the transition to the contract method for cargo-handling operations from the industrial technical maintenance base and acquisition services and an overlap with centralized shipments of construction materials from local suppliers to projects that are under construction or being renovated. During this stage, the volumes of centralized shipments will amount to more than 932,000 tons.

Stage II includes an overlap with centralized transfers and interregional transfers within an association and an increase in the volume of centralized shipments by the contract method to 1,500,000 tons at their expense.

Table 3

Stages	Volume of Shipments					Average daily occupancy rate for highway transport				
	total, thousands of tons	Centralized from ITMB and AS		By contract method		total, number of units	With centralized delivery from ITMB + AS		With shipments by contract method	
		thousand tons	% of total volume	thousand tons	% of total volume		number of units	% of total	number of units	% of total
1977	3,360	257.6	7.7	392	11.6	716.7	73.7	10.3	78	10.1
Stage I	3,360	--	--	932	27.7	716.7	--	--	185.3	25.8
Stage II	3,360	--	--	1,487	44.2	716.7	--	--	295.6	41.2
Stage III	3,360	--	--	2,487	74.0	716.7	--	--	494.3	69.0

Stage III involves the expansion of centralized shipments into intraregional cargo shipments not associated with the involvement of transport equipment in technological processes and an increase in the volume of cargo shipments by the contract method to 2.5 million tons.

The planning figures indicate that during this process of gradual introduction of the contract method for cargo handling within the Kuybyshevneft association, 183.1 transport units will be conditionally released and a savings of 2,340,300 rubles over the entire introductory period is assured.

Thus, organizing centralized cargo shipments by the contract method within associations is conducive to maximum release of the basic industrial subdivisions while concentrating them in the technical transport administrations will insure the effective utilization of the cargo capacities of transportation resources and will increase the mileage coefficient.

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